THE EFFECTS OF ECONOMIC INTEGRATION ON LESSER DEVELOPED COUNTRIES

by

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I certify that this thesis is my own composition

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TO

LORNA

AND

MY PARENTS

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LIST OF ACRONYMS

AMP	Agricultural Marketing Protocol
AP	Andean Pact
Asean	Association of South East Asian Nations
CACM	Central American Common Market
Caricom	Caribbean Community
Carifta	Caribbean Free Trade Area
CDB	Caribbean Development Bank
CFC	Caribbean Food Corporation
CIC	Caribbean Investment Corporation
COMSC	Council of Quality Standards
EAC	East African Community
ECCA	Eastern Caribbean Currency Authority
ECCM	Eastern Caribbean Common Market
ECOWAS	Economic Community of West African States
EEC	European Economic Community
EFTA	European Free Trade Area
GMS	Guaranteed Market Scheme
ILO	International Labour Office
IMF	International Monetary Fund
LAFTA	Latin American Free Trade Area
LAIA	Latin American Integration Association
LDC's	Less Developed Countries
MDC's	More Developed Countries
OECS	Organisation of Eastern Caribbean States
OFA	Oils and Fats Agreement
OPEC	Organisation of Petroleum Exporting Countries
RFP	Regional Food Programme
UNESCO	United National Educational, Scientific and Cultural Organization
WISCO	West Indies Shipping Corporation

ABSTRACT

This thesis attempts to develop the use of the trade flow model in the evaluation of economic integration in the third world. We concentrate on three inter-related issues.

(i) What is the role of economic integration in the third world, and is it adequate to base third world integration on the traditional theory.

(ii) Given the theoretical role of integration in the third world, what methods and general approach should the evaluation of these schemes be based on.

(iii) To what extent does the trade flow model isolate the effects of economic integration on trade flows.

We develop the trade flow model as one of the aspects of the evaluation framework, and use it to estimate the effects of integration on trade flows in the Caribbean Community (Caricom), over the period 1967 to 1976. We extend the use of the trade flow model from the aggregated form of the equation to estimates of intra and extra regional trade flows, total imports and exports of the region and to the trade flows of the individual member countries.

Based on these results and the evaluation of Caricom we were able to determine the extent to which the model isolates the effects of economic integration on trade flows.

CHAPTER ONE

INTRODUCTION - ECONOMIC INTEGRATION AND THE THIRD WORLD

Section 1.1. Introduction

Since the end of the second world war, international economic integration and cooperation schemes in one form or another have incorporated practically every nation in the world. The majority of attempts at economic integration have been in the third world, where they have been viewed as one of the few alternatives to accelerate growth and development. Integration is not a new concept; the political unification of both Germany and Italy in the nineteenth century, as well as the formation of the USA provide earlier examples, and the history of practically every country in Europe involved forms of integration, although prior to the twentieth century this was based more on conquest than agreement and negotiation. Within the British Empire, integration usually took the form of imposing administrative structures on colonies, this being the case for example in East Africa and the British West Indies.

With the independence of most third world countries within the last thirty years, economic integration has changed in that rather than being externally imposed, the initiative has tended to be indigeneous. Furthermore, with political independence came the desire and need for economic independence, in particular from the industrialised countries. However, for the smaller developing countries in particular, economic independence was not easily attainable and integration was seen as providing one method through which greater independence could be

1 Economic integration is basically a cooperative or coordinating effort, and generally refers to the formation of a free trade area, a customs union, a common market, or an economic union among a group of countries.

achieved. However, the majority of integration schemes in the third world have faced problems that in some cases has lead to their complete failure, and in most to a reassessment of the integration process.

The general success of integration in the EEC and Scandinavia and of federalism in the USA and Australia for example, although encouraging, may not be directly comparable to third world economic integration, as the objectives of integration and the initial conditions are different. In Europe, integration was concerned with the promotion of trade and more efficient resource allocation and utilisation, whereas in the third world, objectives are based on the diversification of production structures and the general enhancement of development prospects.

For many third world countries then, development in cooperation with other similar neighbours may prove to be the only viable alternative to achieve growth, industrialisation and political and economic independence, However, if economic integration schemes in the third world are to develop we need to have a method of evaluation that isolates those effects of integration that are relevant to development objectives. Evaluation and the effects that we look for are determined by theory, and this theory has to be relevant to the problems and objectives of integration in the third world.

The content of integration theory has developed from the customs union theory of Viner (1950), which concentrated on a limited range of welfare effects, to the more recent debates on the rationale (2) and role of economic integration in the third world.

Concurrently, the approach to the evalutation of economic integration has tended to be based on partial analysis of the effects of integration, usually in the context of the industrialised countries. A common approach in evaluating integration is based on the assumption that the majority of the effects of integration can be derived

2. For example Cooper and Massell (1965) and Johnson (1965)

from changes in trade flows. Although this may be the case for the orthodox theory of customs unions, in the context of the third world, integration has to be considered in broader terms of growth and development, and it must be recognised that many of the effects of integration including those on industrialisation, employment and income growth for example, would not necessarily be reflected in trade flows even in the long run.

To develop an approach to evaluation that is relevant to the third world we first have to determine the extent to which the traditional theory is applicable, and from this determine what the role of economic integration is in the third world. Based on this we can then outline a framework for evaluation that takes these factors into account. If past experience is to be useful in the analysis and development of other groupings, then some generally applicable framework of evaluation that would allow a comparable analysis of the effects of integration on other groupings is desirable.

In this thesis we evaluate the effects of economic integration on the Caribbean Community (Caricom). Caricom was chosen because it highlights the types of problems that typically face small nations in their attempts to develop. For Caricom the problems faced derive from small size, economic fragmentation and extensive dependence on extra-regional markets. This integration movement in the Caribbean represents the closest approximation to the best combination of economic viability and political autonomy.

The three main objectives of the thesis are to:-

(i) evaluate the effects of economic integration on trade flows in the Caribbean as part of an exercise to determine the success of economic integration in the context of the third world,

(ii) to determine the extent to which the trade flow model can isolate the effects of economic integration on trade flows,

(iii) to develop the trade flow model beyond the basic aggregated form of equation.

It is important to note here that we are not attempting a cost benefit study, but rather an analysis of the effects of integration on trade patterns.

The trade flow model has not been generally used in the evaluation of economic integration although it does have certain advantages over the standard methods used. In particular the integration effect is measured directly by a dummy variable, and other autonomous effects on trade flows through income growth for example are accounted for directly in the equation.

This thesis makes the following contributions in extending the use of the trade flow model. First, by using adjacent year regressions (3) we are able to estimate the effects of economic integration on both intra and extra regional trade whereas earlier studies only estimated the effects on intra regional trade. Second, the model is extended beyond the straight forward aggregate estimation to equations of intra trade, extra trade, regional exports, regional imports, as well as estimates of trade flow equations for the individual members of Caricom. These provide information on the effects of integration on various aspects of trade flows and as they are disaggregated give a better indication of the ways in which economic integration is affecting trade flows. We also attempt to outline a possible general framework for evaluating integration schemes, in which trade flow analysis is only one part.

The purpose of the next section is to examine the extent to which integration has been a successful strategy in the third world, the nature of the problems faced and in general to suggest the lessons that can be derived from previous integration programmes. This exercise is important as a background to Carifta/Caricom, as well as to suggest possible approaches to integration in the future. The survey of third world integration covers four main integration groupings - East African Community, Latin

3. Adjacent year regressions are discussed in chapter 5.

American Free Trade Area, Andean Pact, and the Central American Common Market - that together provide an indication of the major problems that are likely to face third world integration attempts.

Section 1.2: Lessons from Third World Economic Integration

a East African Community (EAC) (4)

In 1967 the Treaty for East African Cooperation establishing the East African Community was signed between Kenya Tanzania and Uganda. This was the culmination of a history of cooperation within the region that was evident at least by 1917 when Kenya and Uganda formed a customs union. The three countries were eventually tied by a common currency, common external tariff, common services, university and research services, however, 'the motivation of such integration was not the outcome of a belief in African unity or African development. It was established for the smooth running of the British administration and for the security and interest of colonial power!

Prior to independence, the established 'colonial integration' scheme was not satisfactory to the extent that 'it was firmly believed in Tanzania and Uganda that the arrangements worked overwhelmingly to the benefit of Kenya.' (5)

The EAC was established with the aim 'to strengthen and regulate the industrial, commercial, and other relations of the partner states to the end that there shall be accelerated, harmonious, and balanced development and sustained expansion of economic activities, the benefits whereof shall be equitably shared.' (6) However, although the accelerated and balanced development of the region was important, the problem of achieving an acceptable distribution of the resulting benefits was central to the

4. Further discussion of the EAC can be found in Robson (1968), Hazlewood (1975) and Newlyn (1965).
5. Hazlewood in El-Agraa (1982) p.143
6. Eken (1979) p.37

success or failure of the EAC. To this end the main features were: the introduction of the transfer tax to give limited protection for industries in the less developed states (Tanzania and Uganda) against competition from those in Kenya; the establishment of an East African Development Bank (EADB) which was to allocate its investments disproportionately in favour of Tanzania and Uganda, and the relocation of some of the headquarters of the common services. However, the EAC did not provide for the free movement of labour and capital, nor did the provisions of the treaty extend to agricultural products.

The transfer tax was designed to overcome the disadvantages of the two ldc's vis-a-vis Kenya by giving limited protection to the manufacturing sectors of Tanzania and Uganda and thus attaining some measure of industrial balance between the member states. In theory it was applicable only to those industries where additional plants could operate efficiently on a scale provided by their national markets. 'For these industries, the encouragement of duplication was the whole purpose of the transfer tax..', (7) but in practise the distinction between industries that could be supported by the national market and those large scale industries that the regional market could only support one plant, was not clear cut. The consequence was the inefficient duplication of industries, although as Hazlewood (1982) points out this cannot be blamed on the transfer tax. These measures, that should have encouraged industrial growth in the ldc's were never really given a fair chance or used properly, and led to discriminatory purchasing by state trading corporations and quantitative restrictions on imports.

The EADB was established as a means of providing financial and technical assistance, giving priority to industrial development in Tanzania and Uganda, so as to reduce the substantial imbalance between the member states. Tanzania and Uganada were each to receive 38.75% of EADB

7. Hazlewood in El-Agraa (1982) p.147.

investments and Kenya 22.5%. However, with the emphasis on industrial investments, building, transport, tourism and agriculture (except for the processing of agricultural, forestry and fisheries products) were excluded. Furthermore, the EADB's funds were very limited when compared to the annual investment in industry in the three members, and on average the annual commitment of funds by the bank accounted for no more than 4% of industrial investment in the partner states. As a result EADB could only exert a limited influence on industrial development. By the end of 1975, EADB's investments in total were little more than twice the original contribution of the partner states, and the actual allocation of funds was different from those envisaged with Tanzania receiving 39.2%, Kenya 34.5% and Uganda only 26.2%. 'The most important role of the bank could be seen as to act as a catalyst for complementary industrial development rather than to undertake a major part of industrial investment itself. And in that respect there is certainly reason to question its effectiveness. The projects in which the EADB invested (textiles, sugar, paper, tyres, cement) do not appear particularly relevant to the aim of making the economies of the partner states more complementary.' (8)

Overall the EADB did not appear to be particularly successful and 'as a result, unequal benefits derived from unequal growth rates in the manufacturing sectors of the three countries created tensions in the operations of the EAC.' (9)

It was also hoped that the relocation of the headquarters of the common services combined with some decentralisation of their operations would also act as a mechanism for a fairer redistribution of the benefits of cooperation. However, the greater part of the local expenditures made by the services, and of the employment provided by them, continued to benefit Kenya. By the early

8. Hazlewood in El-Agraa (1982) p. 147-148
9. Eken (1979) p.39

1970's more than half of all the activities of the common services were in Kenya, and one third in Tanzania, while Uganda with less than one fifth of the total received least from the arrangements.

A major change in this distribution could only occur in the longer run with relatively greater economic growth in Tanzania and Uganda although the increased costs imposed by the relocations and decentralisations posed a serious problem.

Although the EAC was initially successful, relations started to deteriorate in the early 1970's, and by the middle of 1977 when the partner states failed to approve the 1977-78 budget for the Community, the EAC was effectively broken down. This final situation arose for a variety of reasons, although it is not possible to pinpoint any one cause of failure. The main reasons include:
(i) the decision making functions of the EAC rested with the presidents, and as such the system relied too much on harmonious relations between them so that control of the EAC collapsed when relations became bad, and the source of initiative for the continuation and development of cooperation died. This situation arose after 1971 when Idi Amin ousted Milton Obote in Uganda, and President Nyerere refused to meet with him. As a result the East African Authority never met again and a vacuum in the decision-making functions in the EAC was created.
(ii) There was a general feeling by the member states, in particular by Tanzania and Uganda that the distribution of benefits was unequal. The instruments devised to aid a more balanced development had failed to come up to expectations, and the EAC was still effectively relying on the reallocation effects of the free trade area. Consequently, the problem of polarisation of industrial activity in Kenya was not alleviated. Although studies (10) have shown that Uganda for example was marginally better off being a member of the EAC, even more important than the

10. For example Newlyn (1965)

objective situation was the perception of the partner states about the costs and benefits of the system. 'Economic integration has to be based on a positive sum game if it's to remain in being. However as time went on the partner states increasingly behaved as if they believed it was in fact a zero or even negative sum game'. (11) Although this view may to some extent be justified as the benefits from the common market began to disappear with the duplication of industries, and the benefits of the common services were dissipated in inefficiences and financial difficulties, the belief that the EAC was not equitable certainly worsened the situation.

(iii) Other general points that probably contributed to the failure of the EAC include, balance of payments and foreign exchange problems that combined with the oil price increases of 1973/74 led to restrictions on regional trade; the growing ideological division between 'capitalist' Kenya and 'socialist' Tanzania, and transport coordination, which was an old issue left unsettled by the treaty in which the absence of a settlement led to strains between the partner states.

b Latin American Free Trade Area (LAFTA) (12)

The Treaty of Montevideo in 1960, establishing LAFTA was essentially a compromise of two regional projects under discussion in the late 1950's. First, there were the efforts of the United Nations Economic Commission for Latin America (ELCA) as the major proponent of programmed import substituting industrialisation. Within the region many countries had adopted deliberate policies of import substitution. However, during the 1950's, nationally based import substitution began to face serious constraints. Import substitution based on consumer manufactures was close to its limit, and the cost of financing the industrialisation process grew faster than import capacity.

11. Hazlewood in El-Agraa (1982) p.156
12. Further discussion of LAFTA can be found in El-Agraa (1982), Vaitsos (1978), Cole (1969) and Tussie (1982)

These problems were further exacerbated by deteriorating terms of trade after the Korean War.

To encourage industry the ECLA argued the importance of economic integration as a solution to the problems of insufficient domestic demand and as a method to aid the industrialisation process including the manufacture of consumer and capital goods. By 1957 there was a commitment in principle to establish a Latin American Common Market to promote import substitution on a regional rather than national basis, with the emphasis on trade liberalisation as the vehicle rather than regionally planned industrialisation.

However, the process of economic integration was complicated by the appearance in 1959 of a second integration scheme. During the 1940's and 1950's the Southern Cone countries (Argentina, Brazil, Chile and Uruguay) had developed an important mutual trade in primary commodities which had deteriorated after 1955. The Southern Cone countries therefore proposed a scheme for a free trade area with the objective of stimulating the declining level of intra regional trade.

Overall the initiative lay with the Southern Cone as they had an urgent, short term objective in view. As a result LAFTA came into being as a hybrid:it was an emergency solution to immediate problems affecting a nucleus of its members, but in order to transcend this limited purpose it was adapted to form the first stage in the movement towards a common market.

The main objective of the Treaty was the establishment of a free trade area within twelve years, and to achieve this three mechanisms were to be used.

(i) National Schedules which listed commodities on which member countries separately made concessions applicable to all other members.

(ii) The Common Schedule which listed commodities on which regional free trade was to be progressively established in four rounds of negotiations, occuring at three year intervals.

(iii) Industrial Complementary Agreements to facilitate the integration and complementation by products or sectors of economic activity.

As the negotiations for the adoption of national lists during the first few years covered mainly traditional trade items there were few serious difficulties. furthermore, a substantial proportion of the concessions granted comprised lists of products which appeared in pre-LAFTA bilateral trade treaties, in particular those covering agricultural commodities between the Southern Cone countries. However, once the traditional flows of intra-regional trade had been consolidated and increased, the national schedule concessions became more difficult to make, as an advance toward the liberalisation goals laid down required the incorporation of non-traditional products which were generally manufactures for which there was a decided tariff protection in most countries of the area.

Apart from these problems the national schedule did not necessarily create a regional market in any commodity since there was no reason why more than one member should reduce tariffs on a particular commodity, while it did allow any two countries to stimulate trade relations between themselves.

In 1964 the first round of negotiations on the common schedule included mainly agricultural products. However, it was decided in advance that although inclusion of a commodity on the common schedule was irrevocable, it was not necessary to activate any part of the schedule until 1973, and thus the establishment of a regional free trade in any commodity might be postponed until then. Thus the liberalisation principle was further weakened.

In 1967 the second round of the common schedule failed to be concluded as opposition was encountered to the inclusion of wheat and crude oil in the schedule, although to maintain the target rate of trade liberalisation these commodities had to be included. The negotiations were resumed in 1968 and were finally terminated with no

agreement.

As a result a process of assessment of LAFTA took place in 1969 resulting in the Caracas Protocol. Basically it was a compromise between those countries who were pressing for machinery to secure a better distribution of the benefits of the integration process and in favour of measures to create a common market, and the relatively more developed countries who favoured stengthening the free trade area before moving onto more complex forms of economic integration. The result was an extension of the deadlines for the free trade area, as well as an 'Action Plan' to study the conditions for the establishment of a Latin American Common Market.

The regime of industrial complementarity, which provided for tariff reductions applicable to industrial sectors, or to the international operations of a single company, was not fully structured until 1964. By 1979, over 3,500 tariff concessions had been negotiated under the scheme, in a range of industrial sectors including chemicals and petrochemicals, electrical generation and transmission equipment, glass products and office equipment. The regime was a facility passively offered to industrial groups in member countries, and implied no national industrial programming. Only one of the twenty five agreements has been signed by more than five countries, whereas seventeen have been signed by only two or three countries. It is not surprising that the most highly industrialised countries of the area signed the majority of the agreements, since those agreements were intended precisely to speed up the process of tariff reduction for industrial goods, and the growth of trade in manufactures and semi-manufactures benefitted the larger countries in the area.

Since 1967 LAFTA has been in a state of crisis, and the Caracas Protocol was just a marking of time. Dissatisfaction with LAFTA manifested itself in 1969 when five Andean countries signed the Cartagena

Agreement creating the Andean Pact, and further debilitating LAFTA.

A second major reaction to the crisis in LAFTA has been the growth of bilateralism among the countries not involved in the Andean Pact. By 1977/78 there was a broad consensus regarding the need to revitalise LAFTA. In Montevideo in August 1980, a new treaty was signed which set up the Latin American Integration Association.

Although it can be argued that LAFTA failed, it has also been suggested that the 'limited and specific objective of the Southern Cone group for which it was created... was more or less satisfactorily met: the renewal of traditional trade flows.' (13) However, for the other less developed members, LAFTA did not meet their aspirations for development. Although intra-regional trade flows did increase from 6.6% to 13% of total trade in 1979, this largely benefitted the Southern Cone countries and only reinstated the share of regional trade to pre-LAFTA levels.

It also has to be remembered that the process of liberalisation at the regional level very quickly ran into trouble and was effectively circumvented by agreements to delay implementation of decisions. In fact the result of the National and Common Schedules had an effect similar to a series of bilateral agreements rather than of a free trade area. In this respect LAFTA has to be considered a failure at least in terms of the stated objectives.

Finally, a major problem was the obvious split within the region between the Southern Cone countries with the objective of expanding regional trade in certain primary products, and the lesser developed members (who formed the Andean Pact) who were more concerned with regional industrialisation. 'A glance at the membership of LAFTA indicates the existence of a fundamental obstacle. While it is not possible, objectively, to define the optimum size of an integrated area, LAFTA was probably too big.

13. Finch in El-Agraa (1982) p 224

The optimal grouping is most influenced by the need for wide acceptance of the goals of integration. As public goods are to be provided, notably including planned industrialisation, the ways and means must be generally agreed.' (14)

c Andean Pact (AP) (15)

As a result of their dissatisfaction with LAFTA, Bolivia, Colombia, Ecuador, Peru, Venezuela and Chile through the Cartagena Agreement of 1969 formed the Andean Pact. The main objective entailed the promotion of balanced and harmonious integration, in such a way as to ensure equitable distribution of the benefits of integration among the member states. The AP presented several features that made it in some ways unique in third world integration.

The measures used included:-

(i) harmonization of policies;
(ii) programme for the liberalisation of trade and the common external tariff;
(iii) sectoral development planning and rationalisation of industry;
(iv) programmes for the development of agriculture and infrastructure;
(v) preferential treatment for Bolivia and Ecuador and,
(vi) channelling of resources into integration programmes.

Certain features of the Cartagena Agreement are of particular interest including the establishment of an automatic liberalisation of trade which covered all the products of the subregion and provided for the elimination of all tariff changes and restrictions by not later than December 1983. This process began in 1970 Non tariff barriers on intra-AP trade were eliminated at the start of the 'automatic' intra trade liberalisation programme.

14. Macbean and Snowden (1981) p.184
15. Further discussion of the AP can be found in El-Agraa (1982)

The AP tariff policy comprised two phases, the first a common minimum external tariff and the second a common external tariff.
However, despite the progress made towards introducing the CET, it was not possible to meet the target date. The automatic dismantling of intra-AP trade barriers was accompanied by an increase in intra-regional trade from 61.9mn US dollars in 1969 to 1,418mn US dollars in 1980, although 43% of this was accounted for by Colombia. In 1979 non-traditional exports and manufactures accounted for 74% of total Andean Trade.

The Cartagena Agreement considered industrial programming a fundamental mechanism for the promotion of 'balanced and harmonious' development in the subregion. Joint industrial development programming was to be achieved through two mechanisms: sectoral industrial development programmes, and programmes for the rationalisation of existing industry. The former are aimed at locating industrial plant in member countries, with each country respecting the allocation of such plants to others. The latter are intended to improve the conditions for the subregional industries whose products are not covered in the sectoral programmes and which are therefore subject to competition.

Although sectoral industrial development programmes were approved in the metalworking, petrochemical and automobile industries, the metalworking and automobile production was allocated to member countries where production facilities were already in existence. Indeed allocations were easier to make on a 'regional' basis only with regard to industries that did not exist at all within the AP and little has actually materialised here.

The ideal of an equal distribution of industry has been undermined by the varying levels of development of the countries concerned and the inability of those most lacking in infrastructure to exert any influence on decision making in the face of resistance to the closing of existing plants

for fear of reductions in employment levels.

One of the main instruments for harmonisation of economic policy was the common system of treatment for foreign capital - decision 24. This system is designed to establish a balance between foreign investors and the Andean countries, so that the former receive an adequate return on investments and the advantages of a subregional market, while the latter benefit from emphasis on priority sectors and national participation in the capital and management of enterprises set up with foreign capital. The system entered into force in 1971.

Although foreign capital grew initially, since 1975 direct foreign investment fell abruptly, between 1975 and 1978 by 700mn US dollars. (16) In part this was associated with the withdrawal of Chile from the AP in 1976 as well as fears of future instability in the AP.

By 1980, the AP was virtually defunct and once again the concern with the unequal distribution of the benefits, the duplication of inefficient plant and the 'lack of political will' all contributed to the failure of the AP. Basically, although the approach could have been successful the instruments were not given a fair chance nor always used to their best advantage.

d Central American Common Market (CACM) (17)

With the start of the secular decline in prices of Central America's traditional exports (coffee, bananas, cocoa and sugar) in the mid-1950's, there was increasing interest in the ECLA inspired import substituting industrialisation model of development. It was agreed that given the size of the region's economy, industrialisation could only be carried out at the regional level if dupliation of high cost inefficient plants was to

16. El-Agraa and Hojman in El-Agraa (1982) p.232
17. Further discussions of CACM can be found in El-Agraa (1982), Vaitsos (1978), Wronczek (1968) and Bulmer-Thomas (1979)

be avoided.

In 1958 the five countries (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua) approved the Agreement on the Regime for Central American Integration Industries and at the same time signed the Multilateral Treaty on Free Trade and Central American Economic Integration, followed in 1960, by the General Treaty on Economic Integration which established the CACM.

A prime objective of the CACM was industrialisation by stimulating the development of the industrial sector as part of a process of extra-subregional import substitution. The industrialisation objective was pursued through the freeing of trade within Central America (effectively restricted to industrial products) subject to a common external tariff. An important feature of the liberalisation regime was that it was carried out quickly, 74% of all items listed in the tariff schedule entered intra regional trade free of all restrictions as soon as the General Treaty went into effect. Where tariffs were reduced over a period of years this was done automatically.

As a result the progress made under the free trade regime was considerable. Intra regional trade, which over 1952-60 had grown at an annual rate of 14.9%, achieved an annual growth rate of 24.8% over 1960-70. In 1960 intra regional trade's share of total trade was 7.5%, by 1970 this stood at 26.9% although by 1980 it had fallen slightly to 24%. At the same time the structure of regional trade changed, with manufactures increasing their share from 19% in 1960 to 86% in 1978. This seems to have the most successful aspect of the CACM.

The 1958 Regime for integration industries was designed to encourage industry as well as avoid the problems of polarisation. The Agreement has two main aims, (i) to establish certain industries in the area to act as a focus for industrial development and (ii) to prevent industries from concentrating in one country and thus to ensure that the benefits of industrialisation were enjoyed

by all countries concerned, thereby achieving balanced industrial development in the region. Firms receiving status as integration industries received duty free treatment on inputs while being guaranteed free access to the regional market, at the same time, the same products produced by firms not accorded integration industry status would be subject to trade taxes within the region. The Regime therefore conferred a virtual monopoly position on any firm that received its benefits, although in return it would be subject to price and other controls.

However, the regime had very little effect on Central American industrial growth, and few industries took advantage of it. Its lack of success has been attributed to various factors including:-

(i) the list of industries was not well planned and did not represent an industrialisation programme for the integration area,

(ii) the system was cumbersome to operate;

(iii) there was a lack of promotional machinery,

(iv) other measures in the integration programme lessened the attraction of the integration industries and it was never given a chance to operate;

(v) there was strong external opposition to the system from sources of financing in third countries (ie the USA) and from foreign industrial groups, which viewed the integration industries as potential monopolies. (18)

The regime was effectively destroyed by the signing of the General Treaty, which established free trade on a product basis thereby leaving little room for protection by plant. Deprived of its principal mechanism for ensuring an equal distribution of benefits the CACM was left with only a number of minor instruments for achieving this objective.

Although the CACM achieved initial successes, difficulties arose as a result of the loss of government revenue caused by net trade diversion and prohibitively

18. In particular see Vaitsos (1978) p.726 for an extensive discussion of the influence of foreign government on regional groupings

high tariffs on imports from third countries. This resulted in the San Jose Protocol (1967) which allowed countries to increase revenues by imposing a surcharge of 30% on the CET. Then in 1969 the 'guerra inutil' between El Salvador and Honduras led to Honduras' departure from the CACM in 1970. From then on the CACM lost its dynamism. In 1978 the integration process was further affected by the political situation in Nicaragua which led to the closing of the frontier with Costa Rica. In March 1980 the Declaration of San Jose, reiterated the political will of the Central American states to restructure the integration process.

Although by the late 1970's, the CACM could have been considered a failure there were still many positive features incorporated in the original treaty, that as in the Andean Pact were perhaps never given a fair chance to work. In particular the Regime for Integration Industries could have been a very useful instrument in regional industrial growth. Not only did the free trade area help expand regional trade considerably, and increase the share of manufactures in regional trade, it also helped to increase the share of industry in GDP from 9%-14% in 1950 to an average of 18% in 1978.

Other problems also contributed to the decline in the CACM including:

(i) Industry was not really carried beyond the 'easy' stage of consumer goods production so that growth was tied to growth of real disposable income.

(ii) As a result industry became very import intensive.

(iii) In the early 1970's the sharp increase in the price of Central America's traditional exports revealed that the choice was not between investments in industry but between the industrial sector and agriculture. (19)

(iv) Failure to evolve a framework within which further industrialisation could proceed.

(v) Unequal distribution of net benefits (which also was

19. Bulmer-Thomas in El-Agraa (1982) p.251.

a further reason for Honduras' departure).

In summary, the Central American integration process led to unequal participation in the benefits of the wider market with negative effects in relative terms on the rate of growth of domestic product, disequilibria in the balance of trade and few industrialisation opportunities for the relatively less developed countries.

Section 1.3: Conclusions

Although we have taken only a small sample of the total number of attempts at economic integration in the third world, they do indicate some of the more serious problems and pitfalls that can be a cause of failure. They also suggest certain instruments that could be potentially important in regional development. In section 1.2 we suggested some of the possible causes of failure in regional integration in the third world. We will now discuss the general lessons that can be derived from their experience.

First, we have to consider the compatability of the respective members of a regional grouping. This point was raised in the context of LAFTA where it was suggested that the overall size of the grouping was too large and led to problems associated with a lack of a common approach or objective that could be agreed upon. In this instance it was the Southern Cone versus the less developed members. It certainly seems to be important that if a grouping is to succeed that there should be agreement on the main objectives and instruments, for without this concensus some of the members will eventually feel that they are suffering from an unequal distribution of the benefits. This leads onto the second point associated with the perceived distribution of the benefits of integration. In all the four examples discussed above some of the members were dissatisfied with their share or lack of benefits. In the case of the CACM, Honduras left the grouping; in LAFTA the dissatisfied members formed the Andean Pact. Although most

of the groupings had some mechanism to encourage a balanced distribution of the benefits through the allocation of industries or special regimes for the ldc's, these systems were either inadequate or misused.

It is generally held that negative integration (ie the removal of barriers to trade) is easier to achieve, and in general is attained in practise. However, as seen in the case of LAFTA this was not the case. The series of negotiations creating the free trade area either broke down or were circumvented. In contrast, in the case of both the Andean Pact and the CACM the creation of the free trade area was either immediate or automatic, and as a result the problem of incompleted negotiations was avoided. In the case of the CACM especially, this allowed a very large expansion in regional trade. It would appear that greater success in creating a free trade area may be possible the more 'automatic' the system. Of course changing circumstances may mean the system has to be ammended, but in general the less that is left open to negotiation the more is likely to be attained.

However, the major problem area seems to be that of 'positive' integration, in particular the development of industry. Apart from the greater choice of industry available to a regional grouping, industrial policy is also concerned with and is viewed as a means of distributing the gains of integration. This dual purpose of regional cooperation, in allowing a greater range of industry as well as a method to distribute the benefits of integration, can face serious constraints. On the one hand the most efficient method of industrialisation for the region as a whole may imply concentration of plant in a limited number of states or regions. On the other hand, an equitable distribution of benefits implies the opposite. If industry is left to free market forces the result is likely to be polarisation - as in the case of the EAC - especially if there is initially a wide distribution in the level of development between the member economies. To

overcome the problem of polarisation various forms of industrial allocation have been devised. These include not only the allocation of plants but various concessions - such as duty free inputs, tax incentives etc - to encourage industry in general. However, in all of the examples above the instruments used have faced problems in implementation - in the EAC the transfer tax was to encourage industries that could be supported nationally, in practise inefficient plants that could not be supported nationally were set up. Although the Regime for Integration Industries in Central America was effectively made redundant by the General Treaty, Vaitsos (1978) also suggests that the USA was a major factor in discouraging the integration industries regime. This type of pressure is liable to affect most third world countries, where threats of stopping aid (as in the case of the CACM) means that they do not always have the economic and political independence to allow integration schemes to fulfill the aspirations of the region.

Perhaps many of the problems that confront regional cooperation are unavoidable, but the experience of other groupings can at least give an indication of likely areas of conflict. As will be seen in the case of CARIFTA/CARICOM there are many similarities with the above examples that can provide useful information in the analysis of problems in the West Indies.

Section 1.4: Outline of Thesis

In chapter two we provide an economic background to the Caribbean region and describe the integration process, instruments and objectives of Carifta/Caricom. To provide a basis for the methods of evaluation in this study, in chapter three we examine the standard theory of economic integration to determine the extent to which it can provide a basis for evaluating third world economic integration. Given the limited application of the standard theory we then suggest a possible role for economic integration in

the third world based on the idea of integration as a framework for development and development policies.

Based on the role of economic integration in the third world, we derive in chapter four an approach to evaluation that would isolate those effects of integration that are important for the third world. However, we do not intend to attempt a full cost benefit study and instead concentrate on those effects associated with trade patterns. We present a trade flow model to be used in isolating the effects of integration on trade flows, with the ultimate objective of assessing the extent to which the trade flow model can isolate these effects.

In chapter five we present the empirical results of the trade flow model, the expenditure share approach and the changes in income elasticities of import demand. These results provide the basis for evaluating the effects of economic integration on the West Indies.

Chapter six is an attempt to evaluate Carifta/Caricom on the basis of and to the extent allowed by the results of chapter five. This is not an attempt to measure the net welfare position of regional integration, but rather an evaluation of the success or failure of a limited number of areas of economic integration with particular emphasis on trade patterns.

Finally, in chapter seven we draw together the main points of the thesis and discuss the extent to which the trade flow model was capable of isolating the effects of economic integration on trade flows.

CHAPTER TWO

BACKGROUND TO THE CARIBBEAN REGION

Section 2.1: Introduction

Chapter two has two main objectives. First, we provide a general background to the economy of the Caribbean Community, supplemented by a more detailed analysis of the individual economies in Appendix A. Second, we describe the regional institutions and integration process in the region, outlining the objectives and instruments created by the Caribbean Free Trade Area (Carifta) and the Caribbean Community (Caricom). Both of these sections are required as a background to the evaluation of Caricom in chapter six and as a complement to the estimated results, allowing their interpretation in the context of the integration process in the Commonwealth Caribbean.

Section 2.2: Economic Background of the Commonwealth Caribbean

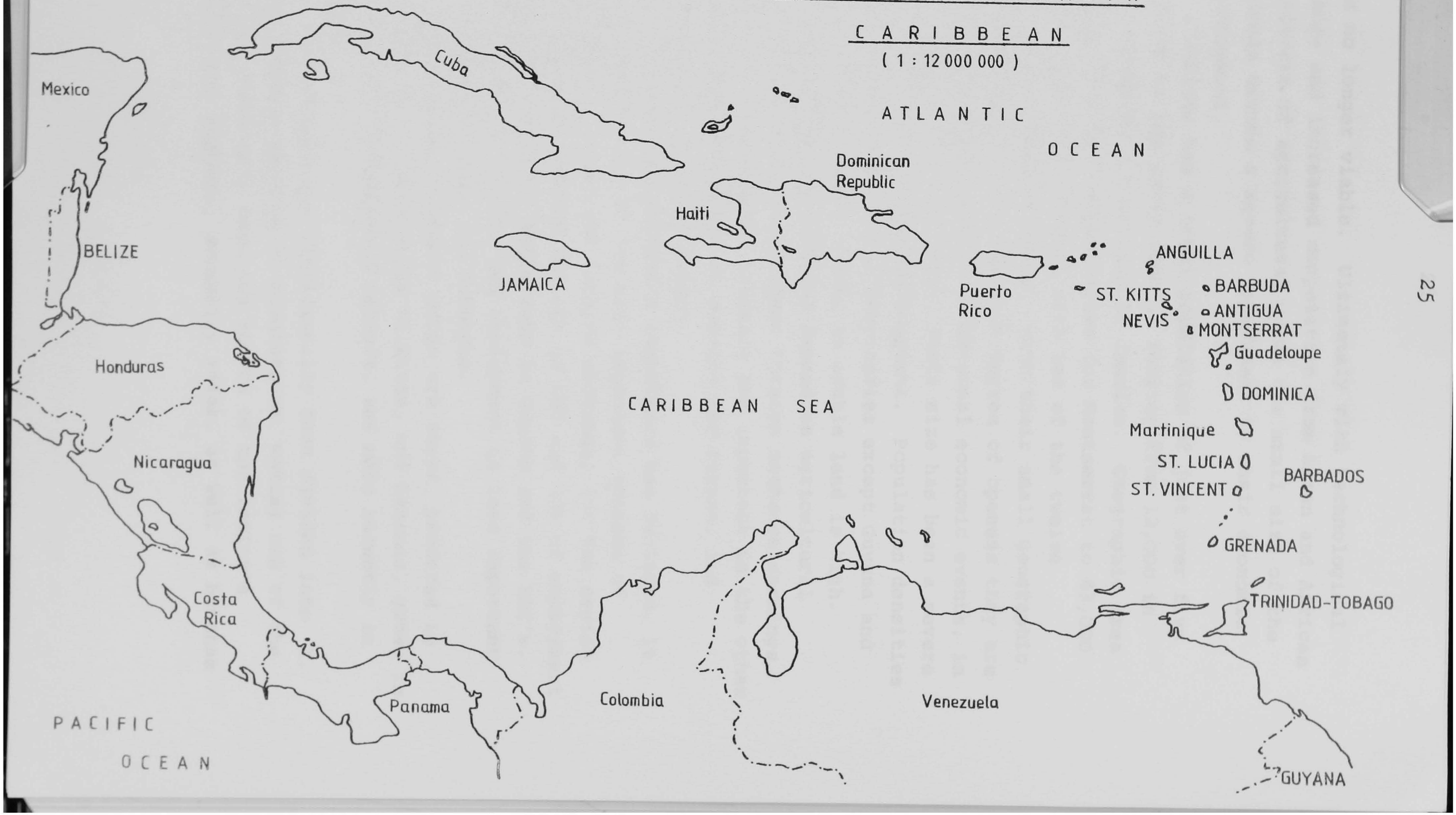
Caricom consists of twelve British Commonwealth Caribbean territories: the more developed countries (MDC's) - Barbados, Guyana, Jamaica and Trinidad-Tobago, and the less developed countries (LDC's) - Belize, the three Leeward Islands - Antigua, Montserrat and St.Kitts-Nevis, and the four Windward Islands - Dominica, Grenada, St.Lucia and St.Vincent.

These territories share a common heritage as former British Colonies. Historically the dominant economic activity was the sugar plantation based on slave and later indentured labour and a secure metropolitan market. Under the colonial plantation system, the size of an island was not a relevant factor as they all could support at least one plantation at an efficient level given the prevailing technology. However, with the abolition of slavery and emancipation in 1834, the system of plantation agriculture

THE COMMONWEALTH

CARIBBEAN

(1 : 12 000 000)



was no longer viable. Ultimately with technological change and increased competition from Asian and African producers of agricultural goods the small size of the islands became a severe impediment to their economic development.

Caricom had a total population of just over five million in the early 1980's, ranging from 12,000 in Montserrat to 2.3 million in Jamaica. Geographic area ranges from 39.5 square miles for Montserrat to 83,000 square miles for Guyana, with ten of the twelve territories being islands. With their small geographic and population size, and high degree of openess they are all extremely vulnerable to external economic events, in particular among the LDC's, small size has been a severe constraint on economic development. Population densities vary greatly, and in all territories except Guyana and Belize, the ratio of labour to arable land is high.

The LDC's and Barbados depend on agricultural exports and tourism for their foreign exchange earnings, while raw or processed minerals are important in the other MDC's: bauxite-alumina in Jamaica and Guyana, and petroleum in Trinidad-Tobago.

Although agriculture's importance has declined, it still remains one of the most important sources of employment, income and foreign exchange; for the region as a whole accounting for 10% of GDP and 30% of employment This sector plays a major role in Guyana and the LDC's, but in terms of income and employment is less important for Trinidad-Tobago and Barbados.

The two major export crops are sugar, produced in the four MDC's, Belize and St.Kitts, and bananas, grown in Jamaica and the Windward Islands, and more recently in Belize.

Agriculture has traditionally been divided into 1. large private estates or plantations, making use of the best land and have been the source of the region's traditional exports, primarily sugar, as well as bananas

and citrus fruit, and 2. large numbers of peasant farms occupying a small proportion of the total land area, producing mainly subsistence crops and contributing only marginally and inefficiently to output for export. This pattern has changed, with most sugar plantations now publicly owned, and a higher share of total production coming from small cane growers. The smaller farms now also account for a larger share of the production of banana, citrus fruit and coconut production.

The sector suffers from several structural and institutional weaknesses, that are a basic obstacle to development. The distribution of landholdings between the large estates and small farm holdings has constrained the development of this sector. The small size and fragmented nature of holdings worked by peasant farmers are often too small to be efficient as well as suffering from poor and inadequate use of inputs such as fertilizers, and the absence of proper soil conservation and irrigation methods. The combined effect of the small size of holdings, insecurity of tenure, sporadic provision of complementary services, and poor agronomic practices makes the smallholders one of the poorest groups in the region.

Estate agriculture also suffers from major inefficiences because of the volume of land that remains uncultivated. Estates typically cultivate one crop on the most suitable sections of their total holding, and land that becomes too marginal for the main crop may lie idle. Therefore the particular export crop, related as it often is to the needs of the parent company, is not necessarily the most appropriate crop for the land.

There has been a significant movement of population away from the land, creating a chronic shortage of labour for the estates. This has been caused by the social stigma attached to plantation work, the attraction of high wages in the modern non-agricultural sector and by the comparatively more strenuous nature of agricultural work

especially where traditional methods are used. This labour shortage has led to the adoption of mechanised cultivation and other harvesting practises that have in some cases cut total output and yield.

As a result, agricultural output has stagnated, and consequently the region's negative trade balance in foodstuffs has continued to worsen. Agricultural production for export fell by about 40% from the mid-1960's to the mid-1970's.

The pattern of industrial development in Caricom has been restricted by the generally small size of the national markets, the lack of intermediate goods and except for the existence of bauxite and petroleum, by the scarcity of natural resources. As a result, manufacturing tends to depend substantially on imported inputs, local value added is small and few linkages have been generated within the domestic economies. Market size is reduced still further for individual items by product differentiation.

Among the Caricom members a broadly similar pattern of industrialisation has arisen, although the timing and extent of their industrial development has varied. The extent of industrialisation ranges from the relatively developed manufacturing sectors of the MDC's especially in Jamaica and Trinidad-Tobago, to the very simple and enclave type of industries in most of the LDC's.

The development of industry in the Caribbean can be viewed as three successive layers. First, a group of products including clothes, low-quality furniture, cement blocks etc., that are labour intensive, use simple technology, can be produced economically on a small scale, and in many cases, are faced by a high cost of transport from external production centres. These types of goods are produced by most of the LDC's. Second, consumer goods, requiring larger scale production and more sophisticated technology. This category includes semi-mass production shoes, margarine, beer, cigarettes, soap

and various mixing and paekaging operations, such as those involving paints, fertilizers, cosmetics, pharmaceuticals and paper products. Guyana and Barbados have reached this stage of industrialisation, while one or two of these industries are to be found in some LDC's. Third, intermediate and consumer goods, requiring still larger scale production and greater technology. These include basic mass consumption intermediate products such as woven textiles, cement, bottles, tin cans, and locally assembled consumer durables including the assembly of bicycles, domestic electrical appliances and motor cars. Jamaica and Trinidad-Tobago have reached this stage.

In general, industrial growth in the Caricom countries has basically involved import substitution in the case of final products, but greater import intensity in the case of inputs.

Manufacturing has been actively encouraged since the 1940's through a combination of government measures including fiscal incentives, and both quantitative and tariff restrictions on manufactured imports. A number of industrial development corporations have been established, to administer and guide the process of industrialisation. Governments have seldom provided capital either free or at preferential rates to promote industry. However, for approved activities, tax holidays, provisions for losses to be carried over, and liberal allowances for duty-free imports of investment goods and some intermediate inputs have been allowed.

Rapid economic growth in the industrial countries in the early 1960's encouraged the development of a tourist industry. During the early 1970's however, tourism was badly hurt by the simultaneous impact of the energy crisis and of sporadic civil disorders.

Although tourism has provided the region with a significant portion of its foreign exchange earnings and created many jobs, the ambivalent attitude of the MDC's toward tourism seems to have hardened into resentment.

The MDC's, with their relatively diversified economies, can perhaps afford to take a critical stand with respect to tourism, the LDC's cannot. To them it offers one of the very few available opportunities to develop their economies.

Section 2.3: Regional Institutions and Integration

Regional cooperation is not a new concept within the Commonwealth Caribbean, attempts having being made since the early seventeenth century up to and including the formation of the West Indian Federation in 1958. The majority of these attempts failed, and it is interesting to note that most were inspired from outside of the Caribbean.

> 'The course of parochialism has been long ingrained, and can be said to be a part of the political culture of the British West Indies. The concept of closer association, for the most part germinated and developed within the Colonial Office in London. Seldom in the nineteenth century did federation have local support or local encouragement'. 1.

The earliest forms of cooperation were within the framework of systems of regional administration. In 1625 Charles I granted authority to Thomas Warner as Royal Lieutenant in St.Kitts, Nevis, Barbados and Montserrat to create laws and establish a court system, but it was not until 1682 that Sir William Stapleton called a General Assembly with representatives elected from each of the islands and 'it might be said that the first session in 1682 at Nevis was the first formal federation in the British West Indies.' (2) In 1711 the Federation

1. Knowles (1972), p.31. Knowles presents an extensive discussion of the history of federalism and integration in the British West Indies up to the formation of Carifta.
2. Knowles (1972), p.23.

dissolved itself, this act being claimed as the 'most decisive of its career.' (3)

A subsequent attempt at administrative cooperation between Grenada, Dominica, St.Vincent and Tobago met with a similar fate.

Throughout the eighteenth and nineteenth centuries and up to the interwar period this pattern continued. In 1816 a govenor was appointed for St.Kitts, Nevis, Anguilla and the British Virgin Islands, and another for Montserrat, Antigua and Bermuda, but there was little political association between the islands. The attempts to federate the Windward islands in 1875 failed, in Barbados there were riots protesting against the imposition of federation.

In 1889 Tobago was federated with Trinidad and shortly amalgamated, 'at the insistence of the British Government.' (4)

Over this period the indigenous opposition to federation was striking, even the proposal for the creation of a common Chief Justice for Grenada and St. Vincent in 1891 caused so much excitement that a warship had to be sent to maintain order.

The opposition to and failure of the attempts at cooperation can be attributed to many factors. The fact that cooperation was imposed from London, rather than developing indigenously is obviously important, especially when 'what was involved was nothing more than an administrative consolidation of separate governments to suit Britain's purposes'. (5) To a large extent opposition to cooperation was based on the fear of the dominant local 'ruling classes' of losing power. Opposition within St.Kitts against Federation in the late

3. Knowles (1972), p. 23.
4. Williams (1962), p. 147.
5. Williams (1962), p. 249.

nineteenth century was expressed in terms of 'the fear that their affluence would be used to subsidise the economies of the less wealthy, more bankrupt islands'.(6) This is similar to the fears of some islands at the time of the West Indies Federation of 1958.

The geography of the area also acted as a hinderance to cooperation, with the islands being scattered over a wide area, and the means of transport and communications being directed toward the metropolitan power rather than within the West Indies. The nature of the regional economy has compounded this problem as the major economic links have traditionally been between the individual islands and the U.K. All of these factors have lead to an insularity of mind, jealousy of internal power and the fear of 'the imperialistic designs of the not so large neighbour'. (7)

By the end of this period 'the very name of Federation was associated in the public mind with weakness, division, and misrule, instead of strength, union and good government'. (8)

The idea of federation arose out of frustration with the slow progress of democracy under colonialism. Federalism was initially fostered by contacts among trade unionists and was seen as a vehicle for developing more democratic institutions. During the 1950's, the movement towards local autonomy advanced faster than that of Federalism among the larger Caribbean territories. By the time of its establishment in 1958, the West Indies Federation was no longer viewed as a necessary instrument of reform and when Jamaica withdrew in 1962 the Federation fell apart.

6. Knowles (1972), p.26.
7. Knowles (1972), p.12.
8. Knowles (1972), p.28.

a) Caribbean Free Trade Area (Carifta) (9)

With the collapse of the West Indies Federation and the subsequent granting of independence to Jamaica and Trinidad-Tobago in 1962, a new era of cooperation in the Commonwealth Caribbean commenced. The idea of a regional economic association (modelled largely on EFTA) was revived in the mid-1960's by Guyana. The establishment of Carifta on May 2nd 1968 was unique in that it was inspired indigenously rather than imposed by Britain. This was an important step in the realisation that economic independence at the national level could not be secured by political independence alone.

The agreement provided for the gradual elimination of tariffs and quotas between the member states and a harmonisation of industrial incentives within the area. The objectives as stated in article 2 of the agreement are:

(i) to promote the expansion and diversification of trade in the area of association.

(ii) to secure that trade between member territories take place in conditions of fair competition.

(iii) to encourage balanced and progressive development of the economies of the area.

(iv) to foster the harmonious development of Caribbean trade and its liberalisation by removal of barriers to it.

(v) to ensure that the benefits of free trade are equitably distributed among the member countries.

Although at this stage Carifta was based on the freeing of regional trade, it was also viewed as a dynamic process, which could lead to the following up of economic intergration and ultimately a Caribbean community. Carifta was to be one of several instruments for the broader aim of cooperation in the Caribbean.

9. See Unctad (1982a), El-Agraa (1982) and Chernick (1978) for further discussion of objectives and instruments of Carifta.

At the same time the Eastern Caribbean islands (the relatively less developed members) were developing closer forms of cooperation which culminated in the formation of the Eastern Caribbean Common Market (ECCM) in June 1968.

In the first five years of Carifta's existence, intra - regional trade increased considerably, but a large part of this increase occured in the MDC's, while the LDC's were not able to expand their exports. It was felt in the LDC's that free trade benefitted only the MDC's who had a more developed industrial base and 'by 1972 Carifta was generally seen as inadequate to meet the needs of economic integration among the member states'. As a result the decision was taken in 1973 to replace Carifta with a new organisation the Caribbean Community (Caricom) - that would provide additional opportunities for economic integration, with an emphasis on obtaining greater benefits for the LDC's.

b) Caricom (10)

Caricom was formally established on July 4th 1973 by the prime ministers of Barbados, Guyana, Jamaica and Trinidad-Tobago. Although the Treaty of Chaguaramas came into effect on August 1st 1973, Carifta was not formally superseded until May 1st 1974, by which time all former members of Carifta except Antigua and St.Kitts-Nevis had acceded to the new grouping. Antigua joined on July 5th 1974 and St.Kitts-Nevis on July 26th.

Caricom has three basic objectives: economic integration; functional cooperation in sectors such as transport, health, education, labour, information and services; and coordination of foreign policy.

Economic integration is to be based on the common market, the coordination of common economic programmes,

10. See Unctad (1982a), El-Agraa (1982 and Chernick (1978) for further discussion of objectives and instruments of Caricom.

common action on extra subregional trade and related activities, and a special regime for the LDC's.

The main instruments of the common market are the liberalisation regime and the common protective policy. These include both a common external tariff, removal of non tariff barriers as well as other institutions to promote market integration.

The treaty provided for immediate liberalisation of trade in products originating in the region apart from products included in a reserve list. Duties were to be completely abolished by 1983, the LDC's being allowed a longer period to remove all duties. All quantitative restrictions - import quotas and licences - and other non - tariff barriers affecting intra-regional trade of goods originating within the region were to be eliminated and export duties, apart from those included in a special list, were to be abolished. In general, government aid that amounted to export subsidies was prohibited, and rules were established to deal with restrictive business practices, dumping, and other measures which might affect the free movement of goods within the common market.

The common protective policy consists of the common external tariff and a regime for regional quantitative restrictions. At the time of signing the treaty, the four MDC's also signed an agreement establishing the common external tariff (CET), which came into force on 1st August 1973. The LDC's were to retain current import duties until 1977, and to have adopted the CET by 1981. However, in practice there are four separate tariffs, the CET for the MDC's, tariffs for the ECCM, the Belize Tariff and the Montserrat Tariff. The basic principle underlying the structure of the CET has been to charge very low rates of duty (6%-8%) on the capital goods and raw materials which Caricom needs for its industries, slightly higher rates on semi-manufactured articles and the highest rates on final products.

The widespread, but differing national practices of

exempting certain industrial products from import duties present a special problem for the operation of the CET. To overcome this difficulty the CET Agreement established an Exemptions List of those industries where member countries would continue to allow, on a discretionary basis, duty exemptions for imported inputs. This list is, in fact, a consolidated list of all the nationally exempted industries and covers, therefore almost every existing industrial activity in the Commonwealth Caribbean.

The common protective policy (CPP) is complemented by the adoption of a regionwide quantitative import restrictions regime in place of separate national provisions. Under Article 33 of the Treaty, members undertake to administer their quota regulations and to consult on harmonisation with a view to attaining common regional quantitative restrictions as soon as possible after 1981. However, the differences between the national quota regulations combined with those of the Exemptions list provisions make for a regional trade regime which is not very rigorous.

The other Institutions required to promote market integration include a system of product origin and monetary cooperation.

In a bona fide common market where once a product has entered any part of the common market and paid the CET, it is allowed to circulate freely. However, in Caricom an important aspect of trade liberalisation is the system of product origin. Article 14 of the annex to the treaty laid down a set of rules of origin applicable to products marketed in the subregion. Under this system free access (within the region) was accorded to goods wholly produced within the common market, and to those in which any materials imported from outside of Caricom did not exceed 60% of the export price for the LDC's and any other member 50% of export price.

Because many raw materials and intermediate inputs were not produced in the region, some two hundred

imported items were incorporated in a Basic Materials List, and treated as though they were of regional origin when used in the manufacture of products exported to other countries within the region. This value-added system has the disadvantage that it is possible for a manufacturer merely to increase his profit margins to satisfy the minimum value-added requirement. The regional value-added of 50% is high by the standards of average levels of national and regional value-added in the MDC's. Largely because of the Basic Materials List, it is estimated that the actual local value added component has been about 25 - 35% of final output value. Thus, the manner in which the percentage value-added rule has been designed and applied may have been conducive to inefficient production.

The disputes arising from these practices led the Common Market Council in 1977 to adopt a new origin system based on a process criterion by which goods in order to qualify for free trade treatment would have to undergo specific processes. Apart from removing the controversy associated with the value added criterion, the new origin system was intended to encourage the greater use of regional raw materials in the manufacture of goods.

In 1976 a Council of Quality Standards (COMSC) was established to advise on and harmonise quality standards in the subregion, particularly with regard to new products for export outside of the region. In 1977 the statutes of the Council were approved, fifteen proposals for quality standards in the common market countries were prepared and information was assembled on the nature and scope of services existing in the Community for the testing of samples, with a view to the compilation of a list that could be used by buyers and sellers.

The members of Caricom engage in a modest degree of monetary cooperation. The Windward and Leeward Islands participate jointly in the Eastern Caribbean Currency Authority (ECCA) which issues the Eastern Caribbean dollar.

Guyana, Jamaica, Trinidad-Tobago and Barbados all have separate currency issuing central banks.

A number of agreements have already been reached to reduce the cost of the financial transactions between Caricom members, and to economise on country's holdings of international reserves. Since 1969, special arrangements have been in force for payments between member countries[1] These have taken the form of a series of bilateral agreements between member countries, whereby each monetary authority grants a line of credit to other members which can be drawn on to make day to day payments needed for intra-regional trade. This arrangement was modified in 1976 by relating credits to intra-regional trade flows, and in 1977, it was agreed to merge the network of bilateral credits into a multilateral clearing arrangement. Only the overall regional deficits would have to be settled in sterling or US dollars, thereby economising on scarce foreign exchange.

The objectives of this agreement were; to facilitate payments among participants on a multilateral basis; to promote the use of national currencies and achieve economies in the recourse to currency reserves; and to promote monetary cooperation with a view to expanding trade and economic activity in the region.

Given the small economic size of the individual member states, the industrialisation process was to be based on the region rather than on the national economies. One of the main benefits of integration in the region was expected to derive from the coordination of economic policies and development planning. Measures for the coordination of common economic programmes included:-

(i) the promotion of industrial development by the programming of industries;

(ii) the adoption and application of the plan for the rationalisation of agricultural production;

(iii) the development of natural resources and;

(iv) cooperation in the sphere of tourism.

For the application of these measures a number of

instruments including subregional programmes and projects, harmonisation of laws and regulations and the common regime for Caricom enterprises were implemented.

The objectives for industry are based on greater use of raw materials from the region; the promotion of the development of interconnected industries both within each country and among member countries; finding ways and means to reduce the number of products and to obtain economies of scale corresponding to the size of the expanded market, which will promote greater industrial efficiency; the promotion of the export of industrial products to markets both within and outside the zone; and the promotion of an equitable distribution of the benefits of industrialisation, with particular emphasis on the need to set up industries in the LDC's.

However, in the area of industrial programming progress has been much slower than in agriculture. Substantial technical work has been done on the pulp and paper, and the cotton and textile industries, but the institutional framework has not yet reached the point where these studies can be implemented.

By 1978, with plans to establish joint development projects having been abandoned by most member governments, oil rich Trinidad-Tobago decided to embark on its own development programme.

Beyond the expectation that Caricom would implement complementary production structures, it was also anticipated that there would be greater harmonisation and coordination of econmic policies in the specific areas of fiscal incentives to industry, intra and extra regional double taxation agreements, monetary payments and exchange rate policies, and the ownership and control of regional resources. In general the arrangements do not really contemplate formal convergence of these policies.

The 'Agreement on the Harmonisation of Fiscal Incentives to Industry', signed in July 1973 by all the MDC's, now covers all twelve members of Caricom. Basically, there is an undertaking to offer fiscal

concessions to industrial investment and exporting. The Agreement allows a standard package of investment incentives similar to the various national programmes of incentives it replaces which emphasise tax holidays and duty free imports of capital goods. A major feature of the new package however, is a variation in the length of tax holidays offered according to the level of industrialisation of the country and the degree of local or regional value-added in the activity qualifying for incentives. Exporting industries of the enclave type (exporting 100% of output) are treated specially, being given the longest tax holidays. In cases where activity has 10 - 50% local value-added, but where 100% of output is not exported, the MDC's can only offer investment incentives to 'pioneer' industries; however, the LDC's do not face this constraint.

This agreement is supplemented by a series of Caricom double taxation agreements which are to encourage intra-regional investment by ensuring that investments by Caricom nationals in other Caricom countries will not be discouraged by unfavourable treatment of repatriated income.

In addition, tax concessions on exports were introduced in 1973. This common approach to export incentives was a significant new departure for the Commonwealth Caribbean countries, replacing specific export incentive laws in the case of Barbados and Jamaica, and minor concessions in the case of Trinidad-Tobago. The new export concession is the same for all Caricom member countries and consists of a partial rebate of tax paid on income from exports. The rebate is proportional to the share of export profits in total profits, increasing as profits from the export share increases.

There was also approval of a common regime for Caricom enterprises. The need for generally applicable legal rules facilitating the establishment of multinational enterprises in the Caribbean zone arose because of

the many different legal regimes for existing enterprises in the subregion. This situation led to the approval of the regime for community enterprises.

The regime lays down the requirements for the status of a community enterprise; such enterprises must be under subregional control and subregional objectives. The regime also prescribes the statutory procedure of multinational enterprises of Caricom and the treatment and advantages which member countries agree to accord such enterprises.

One of the most important development strategies for the region is the Caribbean Regional Strategy for Agriculture. Its principle objective is to raise agricultural output (in particular in food crops), employment and income. A number of strategy and policy decisions and agreements have been reached, including; the Agricultural Marketing Protocol (AMP), the Guaranteed Market Scheme (GMS), the Oils and Fats Agreement (OFA) and the Common Agricultural Policy (CAP).

The AMP signed at the same time as the Carifta treaty, contains a series of provisions for the marketing of agricultural products, under which certain specified products are traded on the basis of agreed prices. The protocol also regulates import quotas to countries in surplus or deficit. In practice priority is given to the surpluses of the LDC's, over those of the MDC's, and member countries may be authorised imports from outside the region only when regional supplies are not available.

The AMP was supplemented by a plan for guaranteed markets in 1972. Under the GMS, the MDC's undertook to acquire specific quantities of certain agricultural products from the LDC's. Difficulties were encountered in applying the AMP, mainly due to such factors as inadequate means of transport, insufficient information on markets and the absence of efficient production plans permitting specialisation of agriculture. As a result, the Council of Ministers decided in 1978 to revise these

instruments.

The OFA plays a similar function for oils and fats as the AMP does for other agricultural sectors. The OFA is quite important for the region, as the agricultural and manufacturing activities of the oils and fats industry taken together represent an estimated 5% of regional GDP, and trade within the region is greater than are imports from outside of it.

The Treaty of Chaguaramas created new instruments and institutions for the promotion of agricultural development. A regional food plan (RFP) was approved in 1975, aimed at achieving greater subregional self-sufficiency in the production of foodstuffs, thus improving the regions balance of payments position, reducing the use of foreign exchange on food imports, and also raising the nutritional standards of member states. The plan is intended to supplement national programmes for agricultural development. Based on the objectives of the plan, the following subsectors were selected for priority attention:

(i) livestock products, sheep, milk, mutton, lamb, and hatching eggs,

(ii) fish and fish products;

(iii) cereals and grains;

(iv) fruit and vegetables;

(v) animal feeds;

(vi) production and/or bulk purchasing of agriculatural inputs.

The Caribbean Food Corporation (CFC) is the implementing agency of the RFP. Although it was established in 1976, it was not until 1979 that some Caricom countries took legislative action to give the CFC an operational status. The CFC's function is to prepare, carry out and finance regional food programmes, and can make investments; establish, administer and operate enterprises, acquire, process, transport, market and distribute products; and participate in any other activities in pursuit of its objectives. It is

anticipated that the CFC would, over a period of ten years, replace more than one billion Eastern Caribbean dollars in regional food imports.

To overcome the problems of a widening income gap, the Caribbean Community has devised several schemes in favour of the LDC's. The special provisions for the LDC's can be divided into three sets of measures: (i) measures to facilitate LDC exports to the common market; (ii) measures to confer greater benefits on the LDC's in certain policy coordination instruments; and (iii) measures to promote a greater flow of resources into the LDC's. Some of these instruments were established since the inception of Carifta in 1968; many more were introduced as a 'new deal' in 1973 when the common market was formed.

The LDC's can obtain free entry for their manufactured products in the markets of the MDC's if local value added is 40% as compared with a requirement of 50% local value added for goods produced in the MDC's. There has also been considerable strenghthening of the provision in Article 39 of the original Carifta agreement which allows the LDC's to introduce tariffs on goods imported from the MDC's in order to encourage the development of an industry in any one of them. In future, the LDC's can impose quantitative restrictions as well as tariffs in such cases and the MDC's (except Barbados) will no longer have the right to retaliate, as they had under Article 39 of the original Carifta agreement.

Furthermore, the LDC's will be allowed to grant export allowances (in respect of income tax) on goods exported to the MDC's (except Barbados) while the MDC's will be debarred from granting such allowances on exports to the LDC's. These instruments are in addition to the continuing operations of the Agricultural Marketing Protocol, the Oil and Fats Agreement and the Guaranteed Markets Scheme for certain crops in the MDC's.

In sum, the objective of the special regime for the LDC's is to take capital and development (in both

agriculture and industry) to the LDC's. Caricom does not impose an obligation on member countries to allow freedom of movement of persons, but, it has sought an effective substitute for such freedom of movement of persons in a planned and regulated movement of both public and private sector capital from the MDC's to the LDC's.

c) East Caribbean Common Market (ECCM)

In 1968, the seven islands of Antigua, Dominica, Grenada, Montserrat, St.Kitts-Nevis, St.Lucia and St. Vincent formed the East Caribbean Common Market, with the idea of presenting a united front for all further dealings with Carifta, which they joined at the same time.

The ECCM Agreement aimed at a much more advanced form of economic integration among its members than the Carifta agreement, by providing for a common external tariff, freedom of movement of labour and capital, and for a far reaching coordination in agricultural, industrial and tourism development, and in development planning generally and for an extensive program of financial and fiscal harmonisation among the islands.

The ECCM tariff has been drafted in such a way as to maintain on the whole, existing relations with the U.K. and Canada. In addition the tariff has been designed as an instrument for industrial development, while ensuring adequate budgetary returns to all member states. This is reflected in the structure of the tariff, which provides for duty free treatment (or very low rates of duty) for imports of commodities and machinery not available in the area. Goods which are, or could be, produced locally are protected by higher rates of duty. As a social instrument the tariff also provides for very low rates of duty on prime necessities (basic foods and medicaments) and higher rates of duty on luxury items.

In the industrial field, the ECCM in 1974 adopted a resolution instructing the Secretariat to prepare a list of thirty five industries (five in each member) to be established in the area. This list was approved and the

projects are financed by the Caribbean Development Bank (CDB - CARIBANK) and the Caribbean Investment Corporation (CIC) at an approximate cost of 12.5 million dollars.

On June 18th 1981, the seven members of the ECCM signed a treaty establishing the Organisation of Eastern Caribbean States (OECS), which is intended to aid cooperation among the signatories and thereby enhance their position within Caricom.

d) Caribbean Development Bank CDB-CARIBANK

The CDB was established on 18th October 1969, and began operations in January 1970. Its purpose is to 'contribute to the harmonious economic growth and development of the member countries in the Caribbean, and to promote economic cooperation and integration among them, having special and urgent regard to the needs of the less developed members of the region'. To this end, the Bank can assist its members in the coordination of their development programmes, mobilise additional financial resources within and outside the subregion, finance projects and programmes contributing to the development of the region or any of its Caribbean members, provide technical assistance, promote public and private investment in development projects by, among other means, aiding financial institutions in the subregion and supporting the establishment of consortia, and encourage the development of capital markets within the subregion.

As an institution for financing subregional development, the Bank is responsible for channelling and granting loans to the countries of the area, so as to foster their economic development and strengthen the subregional integration process. The Bank devotes most of its financial resources and its technical assistance to the relatively less developed countries. The loans approved for 1970 -79 amounted to a total of 256 million dollars, of which 50.8% correspond to the LDC's.

The Bank's loans for economic and social development have mainly been earmarked for projects directly connected

with agriculture, industry, tourism and infrastructure works.

The aid programme to manufacturing industry in which the bank is engaged, mainly consists of direct financial and technical assistance to the Governments so as to develop infrastructure for industry, give support to workshops and small industries and furnish direct loans to large-capacity enterprises.

Over the period 1970 to 1979, 51% of all loans had been earmarked for the infrastructure sector, including energy, road building, port development, drinking water supply, sea and air transport and housing construction.

e) Caribbean Investment Corporation (CIC)

The CIC was established in 1973, with the aim of promoting manufacturing and agro-industrial enterprises in the less developed countries. It is the main executing mechanism in the Caricom system for the promotion of the industries allocated to the LDC's, and complements CDB assistance by encouraging the flow of private investment.

The corporation provides medium and long term development finance for suitable projects, primarily by subscribing to the equity of the firm concerned, but also through long term loans or by providing guarantees for suppliers credits.

By December 1978, the CIC had committed a total of 870,000 US dollars, for the partial financing of twenty one industrial development projects in the LDC's.

f) Functional Cooperation and Coordination of Foreign Policy

Functional cooperation has concentrated on the health, education, culture and training, transport and energy sectors. There has been a Declaration on Health Policy, and a number of health development programmes have been initiated. In education and culture, there has been activity in fields such as adult education, research and the framing of cultural policy. There is

also a standing committee to deal with labour problems, and other programmes have been initiated in collaboration with the ILO and UNESCO. One of the major priorities of Caricom is the development of a transport system. In 1975, the West Indies Shipping Corporation (WISCO) was established, and operates as a commercial maritime transport enterprise, providing direct transport services for the LDC's. The Caribbean energy project is aimed at reducing the region's dependence on energy supplies by developing regional energy capacity and promoting and adapting technologies based on non-traditional energy sources.

One of the tasks of Caricom is the coordination of foreign policy. Article 17 of the treaty of Chaguaramas established a standing committee of the member states' Ministers for Foreign Affairs to formulate joint foreign policy positions.

CHAPTER THREE

The Theory of Economic Integration

Section 3.1: Introduction

The evaluation of integration in the third world is central to this study, and the method of evaluation chosen and the effects of integration in which we are interested should be based on a theory that is relevant in the context of the third world, and in particular the Caribbean.[1.] Theory is built on assumptions that allow isolation of the variables and processes considered to be important and of interest so that when the theory is applied the assumptions should be relevant to the problems being considered.[2.]

To provide a basis for the methods of evaluation used in this study, we examine the standard theory of economic integration to determine the extent to which it can provide a useful basis for evaluating third world integration or whether the assumptions required by the theory render it inappropriate. In general, the assumptions of the basic theory do not conform to the preconditions found in the third world, and the requirements for successful integration, as suggested by Viner (1950), are not usually fulfilled by developing countries.

Given the limited application of the standard theory we suggest a possible role for economic integration in the third world based on integration as a framework for development and development policies. Economic integration can provide certain prerequisites for development, in particular for industrialisation, which include for example a larger protected market and access to a greater resource base, as well as

1. Although integration theory has evolved in different forms, appropriate methods of evaluation have not always developed concurrently. For example, there is a tendency in empirical studies to emphasise the trade flow pattern of integration, and to interpret them according to the orthodox theory, thus producing only a partial description of the process.

2. In some cases the theory itself may assume away important and relevant problems. For example, orthodox theory assumes that no resources are unemployed; this is obviously contradicted in many third world countries where unemployed and underemployed resources are a major problem.

providing a framework for exploiting both scale and dynamic economies. Essentially economic integration is viewed as a catalyst for regional development that creates conditions that are conducive to development planning.

Once an appropriate theoretical approach is established, and we are aware of the likely effects of integration on a region, a relevant method of evaluation can be derived.

Section 3.2: Concepts and Definitions

The term 'international integration' has been used to refer to almost every conceivable aspect of international economic, social and political relations. It has also been defined as a process and as a state of affairs reached by that process. In this study although we are concerned principally with the economic aspect of integration, non-economic factors, specifically societal and political, are important.[3] Not only does economic integration require a certain degree of political integration, but the coordination of many economic policies involve essentially political decisions. Although political commitment to the concept of economic integration is crucial for its success, there has rarely been true integration of national political processes and institutions into regional institutions. What has tended to develop are parallel processes and institutions at the political level that provide a framework for the administration of policies designed to achieve economic integration objectives. Furthermore, the emphasis is on political cooperation rather than political integration, principally because the majority of independent states wish to maintain their sovereignity as far as possible. As such, there is a basic conflict between regionalism and nationalism, the balance maintained being determined by the institutional requirements of cooperation objectives. In general, economic integration requires the parallel development of social and political integration as a necessary pre-requisite for the optimal functioning of the regional economy.

3. See Nye (1971) and Orantes (1981)

Machlup (1977) has traced the origins of the concept of integration as used in economics. Although the term was first used in industrial organisations referring to the combination of business firms, he concludes that the term in the sense of international economic integration made its appearance between 1939 and 1942. It is generally accepted that the theory of customs unions and integration is dated from Viner's study in 1950, by which time the term was being 'used more specifically ... to denote a state of affairs or a process involving the combination of separate economies into larger economic regions'.[4.]

The earlier work on international economic integration concentrated almost exclusively on customs unions and free trade areas, although it is now more common to subdivide economic integration into:-

> Free Trade Area which involves the removal of quantitative restrictions and customs tariffs on the trade among the members of the grouping;
>
> Customs Union that incorporates a free trade area and unifies the tariffs of the member countries against non-members;
>
> Common Market that incorporates a customs union and abolishes all restrictions on factor movements within the area;
>
> Economic Union that incorporates the common market and also provides for a certain degree of harmonization of economic, monetary, fiscal, social and counter-cyclical policies.

These definitions imply a natural progression through the stages of integration from the liberalization of trade, to freedom of factor movement, coordination of policy and eventually total integration of member nations.[5]

The first three definitions correspond to Tinbergen's 'negative integration' incorporating those aspects of integration that involve the removal of discrimination and restrictions on trade and the movement of factors of production.

4. Robson (1980)

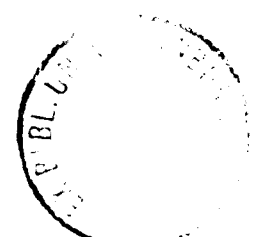
5. Tinbergen (1965)

An economic union on the other hand involves aspects of 'positive integration' concerned with the 'modification of existing instruments and institutions and the creation of new ones for the purpose of enabling the market to function effectively and also to promote other broader policy objectives in the union'.[6.]

Given this framework, economic integration can be defined both as a process and as a state of affairs. According to Balassa (1966) 'economic integration as a process, represents various measures leading to the suppression of discrimination between economic units of national states, and the resulting forms of economic integration can be characterized by the absence of discrimination in various areas....the theory of economic integration will be concerned with the various forms of integration, the measures required for accomplishing these objectives, the economic effects of integration and problems of optimization in an integrated area'. Alternatively, Kitamura (1966) refers to economic integration as a 'process in which an attempt is made to create a desirable institutional framework for the optimization of economic policy as a whole'. Pinder (1968) defines economic integration 'as both the removal of discrimination as between economic agents of the member countries, and the formation and application of coordinated and common policies on a sufficient scale to ensure that major economic and welfare objectives are fulfilled'.

For the purpose of this study we can consider two approaches to economic integration. First, economic integration can be considered as an objective in itself and consists of the 'process' of removal of restrictions on trade and factor movements within a region. The end result of this process is a state of affairs referred to as economic integration which is characterised by the absence of discrimination in trade and factor movements. Second, economic integration can be considered as a method or framework within which other objectives can be attained, the final objective in this case is not the creation of a form of integration as

6. Robson (1980) p. 1.



such, but the solving of economic problems within a region, using economic integration as a tool in this process.

Economic integration as an objective in itself including the associated resource allocation effects of trade liberalisation has rarely proved an effective approach to the problems of the third world. The removal of discrimination may be an important and generally necessary pre-requisite for successful integration, but unless we can assume a perfect neo-classical world, direct positive measures are required to obtain the desired benefits in a regional grouping. In the case of the third world the simple removal of trade restrictions has produced few benefits except for those members or subregions that are at a relatively more advanced level of development and are able to gain from trade diversion and creation.[7]. If integration is to be useful in the development of the third world, it should be treated as an approach to economic development rather than as a tariff issue and as such is important as a basis for development strategies at the regional level. Finally, it should be noted that the traditional hierarchical structure of stages of economic integration has in practice been confusing as the features of these stages are interwoven with no clear dividing lines. Furthermore, imposing a rigid structure of this sort in practice is unlikely to prove helpful in promoting development objectives which may be achieved by more ad hoc approaches.

Section 3.3: The Theory of International Economic Integration

Prior to Viner's study in 1950 there had been little if any systematic treatment of economic integration, and it is generally recognised that his work provided the basis for modern customs union theory.

Viner was concerned with the question

> '...in so far as the establishment of the customs union results in change in the national locus of production of goods purchased, is the net change one of diversion of purchases to lower or higher money-cost sources of supply'. 8.

7. In particular, polarisation of industrial activity in certain regions has limited the distribution of the benefits of integration. This was the case for example in the East African Community.

8. Viner (1950)

The removal or adjustment of intra-union tariffs effectively changes the relative prices of goods in the markets of the member countries and between member and non-member sources of supply. This in turn affects the subsequent production, consumption and trade patterns. [9.] Viner isolated two forms of change in trade patterns that reflected the removal of tariffs within an economic grouping. First, there would be those goods that prior to integration had been produced in a protected domestic market, but with the removal of intra-union tariffs were now obtainable from another union member at a lower cost. According to Viner (1950) 'where the trade creating force is predominant,one of the members at least must benefit, both may benefit, the two combined must have a net benefit, and the world at large benefits'. Second, there would be those goods that prior to integration were imported from a third (non-union) country, but with the removal of the tariffs on intra-union trade, were now imported from other union members. The competitive disadvantage of higher production costs experienced by the new union supplier is reduced by the removal of the intra-union tariff and the creation of the common external tariff (CET) effectively raising the relative price of non-union goods. From the free trade point of view 'where the trade diverting effect is predominant, one at least of the member countries is bound to be injured, both may be injured, the two combined will suffer a net injury, and there will be injury to the outside world'.[10.]

The welfare effects of the customs union were evaluated in terms of the resource cost of the new supplier, trade creation being a reduction in resource costs and therefore a benefit and trade diversion an increase in resource costs and considered a cost. The relative magnitudes of these two effects determining the net welfare change of the customs union.

9. Assuming no economies of scale etc. the free trade area and common external tariff are effectively a once and for all relative price change.

10. Viner (1950)

Meade (1956) criticised Viner's analysis for not providing a method for weighting the gains from trade creation and losses from trade diversion to produce a measure of net welfare of a customs union. Furthermore, Viner implicitly assumed constant costs of production and zero elasticity of demand for commodities, thereby excluding the possible price and income effects on demand of the change in relative prices. Meade relaxed these assumptions thereby allowing the possibility of substitution among commodities on the demand side. Under these new assumptions the formation of a customs union would not only influence the location of world production as analysed by Viner, but in addition the induced changes in relative prices would affect the pattern of world consumption. Union members would increase consumption of products imported from their partners while reducing their consumption of other products from the rest of the world.

Lipsey (1957) developed a similar analysis of consumption effects employing a modified general equilibrium approach, with ordinal community indifference curves. Within this framework he demonstrated that national and even world welfare may be improved by a trade diverting customs union if a favourable consumption effect were to outweigh an unfavourable production effect.

Although Meade and Lipsey's objections were valid for a general theory of customs unions, Viner's purpose had been misunderstood to an extent, and as suggested by Krauss (1972),

> '... a correct interpretation of Viner requires the assumption that his purpose was not to establish a universal a priori law of customs unions based on production effects, but rather to focus attention on one particular aspect of the customs union problem that he deemed important'. 11.

Based on these earlier works the traditional theory of economic integration is analysed in a comparative static framework under the following assumptions:-

(i) There is pure competition in commodity and factor markets;

(ii) Factors are mobile within, but not between countries;

11. Krauss (1972) p. 414

(iii) Transportation costs are ignored;

(iv) Tariffs are the only form of trade restrictions;

(v) Price accurately reflects the opportunity costs of production;

(vi) Trade is balanced;

(vii) Resources are fully employed.

Under these conditions, a customs union based on the removal of intra-union tariffs and the creation of a common external tariff changes the relative prices of goods in the markets of the member countries and thereby alters production, consumption and trade patterns. Essentially the theory concentrates on the welfare effects of resource reallocation resulting from the price changes induced by the customs union.

To illustrate the effects of an orthodox customs union we can consider a simple example of trade creation and trade diversion in a three country model.[12] Countries A and B represent the two union members, and country C the rest of the world.

Referring to diagram 3.1:-

OW is world price,

CET is common external tariff,

OT(A) is pre-integration tariff levels,

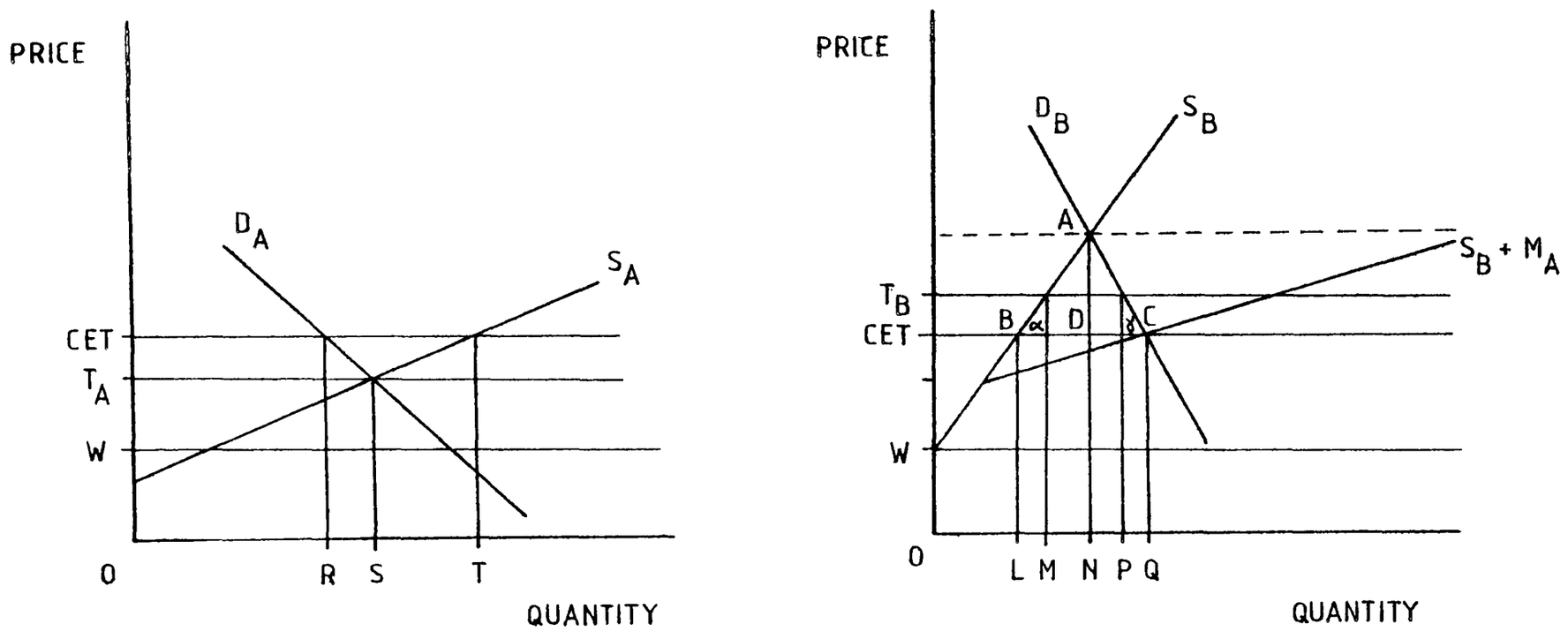
D is demand,

S is supply,

M(A) is imports from A.

Before forming a customs union with B, country A is protected by a prohibitive import tariff of WT(A), and produces and consumes OS of the good. Country B is protected by an import tariff WT(B) and prior to integration domestic demand would be met partly by domestic production and partly by imports. In this case quantity demanded would be OP and quantity supplied from domestic sources would equal OM. Imports from the rest of the world (C) would therefore equal OP - OM . Furthermore, total tariff

12. For this and further examples see Robson (1980) chapter 2.



Source: Robson (1980) p.14

D I A G R A M 3.1

revenues accruing to B would equal MP x WT(B).

Countries A and B form a customs union with a common external tariff WCET. Country A would still produce and consume OS but as the common external tariff is less than world price including the pre-union tariff, country A will replace the rest of the world in supplying B's import demand. Country B now faces a combined supply curve S(B) + M(A) which includes potential imports from A. With the reduction in the price faced by consumers in B from OT(B) to CET, demand in B will expand to OQ, domestic production falling to OL and imports from A will equal OQ - OL.

As a result country B will experience both production and income effects. In the first place production in B has fallen from OM to OL resulting in a saving in production costs equal to the area α . Second, consumption has expanded from OP to OQ with an associated consumer's surplus of δ . These two effects together constitute the trade creation aspect of the customs union. At the same time product formally imported from the rest of the world (OP - OM) is now imported from a higher resource cost source involving an increase in outlay in respect of the initial import amounting to (OP - OM) x WCET - this is the trade diversion effect. The net welfare change is therefore determined by the demand and supply elasticities as well as the intial tariff level and the common external tariff.

Subsequent developments in the theory were based on the relaxation of assumptions as well as longer term effects. In particular terms of trade effects and economies of scale were incorporated. If it is assumed that the supply curve for the rest of the world is not perfectly elastic then possible terms of trade effects have to be considered.[13]. If the formation of the customs union affects the demand for imports from the rest of the world, there will be a tendency for the unions' terms of trade with the rest of the world to improve. The removal or reduction of intra-union tariffs will improve the terms of trade of partner countries with respect to both the tariff reducing country and the rest of the world, but the terms of trade of the tariff reducing

13. See for example Mundell (1964)

country may improve or deteriorate with respect to third countries. Furthermore, the improvement in the terms of trade is greater the larger the tariff cut. It is not at all clear though if a customs union will provide a larger terms of trade gain than a non-discriminatory tariff reduction.[14].

With the removal of trade restrictions the effective enlargement of the market within the regional grouping will provide opportunities to exploit economies of scale. This is essentially a static concept, internal to the firm, resulting in 'falling costs as the scale of output at any point in time increases with given factor prices'.[15].

Viner was aware of this 'one qualification in favour of customs unions'.

> 'There is thus a possibility -that if the unit costs of production falls as the result of the enlarged protected market consequent upon customs union there will be a gain from customs union for one of the members, for both the members, and/or for the union as a whole, but there is the possibility - and often a probability - that there will be a loss in each case'. 16.

To take account of these static economies of scale effects Corden (1972) incorporated a downward sloping cost curve for domestic producers, as opposed to the upward sloping supply curve of the traditional analysis. This allowed the introduction of the concepts of trade suppression and cost reduction, the former reflecting the decrease in welfare following the replacement of imports from their most efficient source by less efficient domestic producers; similar to trade diversion in that a dearer source replaces a cheaper one, but differs in that the dearer source is a newly established domestic producer. The latter concept, cost reduction, reflects the increase in welfare associated with the reduction in the average cost per unit of domestic output when such output expands upon the formation of a customs union and average cost per unit is falling .

14. See Arndt (1968)
15. Corden (1978) p. 249
16. Viner (1950)

Essentially, the incorporation of economies of scale implies an extension of the concepts of trade creation and diversion in much the same way as Viner's definitions were extended by Meade and Lipsey. [17].

A major criticism levelled at the traditional theory has been its inability to provide a rationale for the formation of a customs union. It has been shown that all of the desired benefits of a customs union can be attained at less 'cost' (in a neoclassical framework) by more direct methods, for example non-discriminatory tariffs. [18].
Most of the earlier studies were concerned with the free trade aspects of a customs union, success being judged in terms of trade creation and other manifestations of more efficient resource use. A customs union may appear to be a step in the right direction for a free trader, but only with respect to intra-union trade. In practice however, customs unions are rarely considered as the initial stages of eventual world-wide free trade. There are more direct and efficient methods of achieving free trade objectives - even to attain economies of scale based on a larger regional market, a customs union is not necessarily the most efficient solution - therefore a free trader cannot logically support the formation of a customs union over other methods.

Viner considered the customs union problem as one of free trade versus protectionism and argued

> 'although with less conviction because it involves judgements about quantities in the absence of actual or even possible measurement, that with respect to most customs union projects the protectionist is right and the free trader is wrong in regarding the project as something, given his premises, which he can logically support'. [19].

The free trade or classical Viner-Meade-Lipsey approach was shown by Cooper and Massell (1965a) and others to fail to provide a rationale for the formation of a customs union as it does not 'explain why a customs union would ever be preferred to a non-preferential tariff policy'. [20].

17. Economies of scale are discussed in more detail below.
18. See Corden (1978)
19. Viner (1950)
20. Cooper and Massell (1965a)

They argue that a customs union is necessarily inferior to an appropriate policy of non-preferential protection in terms of trade liberalisation, and so could not be justified as a method for more efficient allocation of resources.

From a free trade point of view participation in a customs union would have to be interpreted as irrationality on the part of the government and our welfare evaluation is in effect the costs of this irrationality. But, as argued by Johnson (1965)

> '...the economist is left without a theory capable of explaining a variety of important and observable phenomena, such as the nature of tariff bargaining, the commercial policies adopted by countries, the conditions under which countries are willing to embark on customs unions, and the arguments and considerations that have weight in persuading countries to change their commercial policies'.

To provide a rationale for participation in an integration scheme based on protectionist arguments within the orthodox framework, it first has to be established that protection is necessary to achieve an objective and second, it has to be shown that economic integration is the best available method of providing protection.[21.] In many cases economic integration is not the first best policy, but because of other factors notable political feasibility, integration may prove to be the more acceptable solution.

Protection can be justified, given the existence of divergences between private and social costs and benefits. If the assumption that prices accurately reflect opportunity costs of production is relaxed then there is a case for introducing subsidies or taxes to correct the distortion. Corden (1978) has shown that there is an hierarchy of policies available to correct a distortion, subject to certain assumptions about collection costs etc.

> 'For any given marginal divergence, or set of divergences there is a first best policy or set of policies. Essentially this policy involves making the appropriate correction as close as possible to the point of divergence'. 22.

21. Robson (1968) p. 36 argues that 'if there is no case for protection, there is in terms of pure theory, no case for integration'.

22. Corden (1978) p.28.

In most cases tariffs are not a first best policy. As you move down the hierarchy of options each policy introduces greater 'by-product distortions', and there would normally be a first best tax or subsidy with less by-product distortion. In terms of efficiency in correcting a distortion a non-preferential tariff reduction is preferable to a customs union.

However, this approach is product-by-product, assuming no collection or distribution costs and is not presented in terms of a general trade and development package. It may be the case that although a tariff has an associated by-product distortion, this may be outweighed by the low cost of collection of a tariff in comparison to a first best tax or subsidy. Therefore, in terms of correcting more than one distortion at a time a customs union may be the best frame-work within which a tax-subsidy package could be executed.

Johnson (1965) and Cooper-Massell (1965) independently tackled the problem of the rationale for a customs union by including public goods in terms of consumption of domestically produced goods in preference to imported goods. If there is a divergence between social and private costs, intervention is required to achieve an efficient allocation of resources. In terms of the traditional model it is necessary to adjust the supply curve by the amount of the divergence.

> 'An important by-product of the Johnson analysis is his demonstration of the potential superiority of customs unions as compared with unilateral tariff policy when public goods are included in the communities social welfare function'. 23.

Cooper-Massell emphasised the industrialisation aspect of customs unions, 'a principle objective of economic integration among less developed countries is to foster industrial development and to guide such development along more economic lines'. [24.] Their analysis is based on the assumption that there may be a social preference for particular types of economic activity,compared with other forms of activity. In this case they assume that the planners may be

23. Krauss (1972) p. 427.
24. Cooper and Massell (1965b) p. 462.

willing to accept a reduction in national income to achieve an increase in industrial production. In other words one dollar worth of home produced industrial output has a greater social value than one dollar of a similar import.

To compare alternative production possibilities, not only the national income, but the level of industrial production associated with each must be taken into account. There is a demand function for industry which expresses the price (in terms of national income foregone) that planners are willing to pay for each increment to industrial production. On the supply side there is a cost for each local industry which is defined as the amount by which the average cost of producing the industry's output exceeds the price of a comparable imported good. At the point of intersection of the demand and supply curves there is a tariff that provides enough protection to induce local production in the relevant industries.

Cooper-Massell then consider the case of two countries who form a customs union, each country having a development plan consisting of a list of industries to be developed. By pooling markets they are able to produce a given level of combined industrial output at a lower cost in terms of income foregone, each country concentrating on the industries in which it has a cost advantage.

Andic et al (1971) expanding on this approach consider the two shortages in developing countries, the foreign exchange gap and the savings gap. First, the loss in national income will be counter-balanced by the savings in foreign exchange resulting from substitution of locally produced goods for imports. Second, the savings gap can be reduced differentially by the establishment of activities which use least capital or generate most savings. From these two benefit and two cost curves can be derived a net cost aggregate curve for each country. All industries where costs are greater than benefits are not considered. If the two countries form a customs union, the country with the least cost production now produces for both.

The Cooper-Massell approach presents the customs union as the most efficient method of achieving protection. Krauss (1972) has pointed out though, that although a customs union may be more effective than a non-preferential tariff when a public good is included, this does not mean that it is the first best policy. A direct subsidy or tax at the point of distortion is more effective than a customs union or tariff. Therefore a customs union is only to be preferred when direct subsidies are not available for political or other reasons; but a customs union could not be generally justified on these grounds. Krauss concludes that

> 'The public good argument fails to provide a general economic argument for customs unions, and thus reinforces the validity of the Vinerian approach that customs unions are best viewed as essentially noneconomic institutions'. 25.

As with the free trade case, the arguments for a customs union based on protection do not provide an undisputed rationale for participation in a customs union.

Section 3.4: Problems of Orthodox Theory in the Third World

It is not at all clear that the orthodox theory,[26] given its comparative static approach and restrictive assumptions is relevant to the third world.[27] It is not capable of answering the questions that are most important to developing countries, specifically, how would the process of integration dynamically change the structural conditions of production and technology, the composition of investments and the capacity to absorb externalities.

The traditional theory of economic integration concentrates on the attainment of static efficiency, the analysis being confined to welfare gains and losses arising from varying degrees of specialisation resulting from the reallocation of given inputs of resources and shifts in the existing trade patterns under static assumptions. These assumptions require that inputs of factors of production ,

25. Krauss (1972) p. 430.

26. That is the theory based on Viner (1950), Meade (1956) and Lipsey (1957)

27. For a similar conclusion see Robson (1968) p.32.

the state of technical knowledge, and the tastes and the forms of economic organisation to be constant; that trade within each country is perfectly competitive; that transport costs, external economies and diseconomies are considered negligible or ignored; that all factors are fully employed; that trade is balanced and prices accurately reflect the opportunity costs of production.

The economic conditions and structure in the third world do not in general correspond with these assumptions, and perhaps more importantly the assumptions remove features or problems of the third world. Third world market structures tend to involve a narrow industrial and market base that is underdeveloped; historically determined comparative advantage concentrates production and trade on a limited range of usually low technology goods; unemployment and under-employment of factors of production remain a major problem; distortions imply that prices do not always reflect the opportunity costs of production, and trade tends to be unbalanced, the general feature of the system being disequilibrium.

It is therefore not surprising that

> 'attempts to establish a theoretical basis for the doctrine of ... integration plans in the under-developed regions, should clash with the neoclassical theory of international trade that originated in the industrial centres and was extended to the field of integration ..' 28.

It is not necessarily sufficient to reject the assumptions of the orthodox theory based on the observations that they do not hold in a particular situation. Restrictive assumptions are necessary to isolate fundamental processes or effects from other non-essential data. Relaxation of some of the assumptions to accommodate other factors may not substantially change the implications of a theory and to an extent this has been the case when static economies of scale and public goods were included in the standard integration theory.

28. Wionczek (1966b)

It was recognised at an early stage that the pre-conditions for successful integration within the neo-classical framework were not in general evident in the third world. According to Viner a customs union is more likely to operate in the free trade direction

1. the larger the economic area of the customs union and therefore the greater the potential for internal division of labour;
2. the lower the 'average' tariff level on imports from outside the customs union area as compared to the level in the absence of a customs union;
3. the greater the degree of rivalry of the member countries with respect to protected industries prior to customs union;
4. the greater the difference in unit costs for protected industries and therefore the greater the economies to be derived from free trade with respect to those industries;
5. the greater the range of protected industries for which an enlargement of the market would result in unit costs lower than those at which the commodities concerned could be imported from outside the customs union area;
6. the smaller the range of industries for which an enlargement of the market would not result in unit costs lower than those at which they could be imported from outside the customs union but which could expand under customs union.

Following the neoclassical model the essence of integration would consist of the freeing of regional trade, a common external tariff no greater than the average existing formerly at the national level, the prevalence of market forces with any new allocation of production factors based on comparative advantage, and limitation of industrial specialisation agreements that could create monopolistic situations, trade distortions and a loss of welfare.[29]

For an economy with an already established industrial base and with developed industries these recommendations may improve the allocation of resources and contribute to a higher rate of growth, but for an underdeveloped economy the result would be damaging to growth and overall development prospects.

29. See Wionczek (1966b)

The outcome of a third world customs union based on the removal of intra-union tariffs and the creation of a common external tariff will to an extent depend on the level of industrialisation and the geographic location of economic activities.

First, the liberalisation of intra-regional trade via the removal of tariffs and other barriers to trade is unlikely to contribute toward the growth or development of the region. The members are likely to be engaged in producing similar types of traditional products which have a limited capacity to expand in trade, production being concentrated on export markets in the industrialised countries. It is possible that the effective extension of the market for semimanufactured and consumer goods may have a positive effect on competition but is more likely to result in domination of the market by the more efficient producers. With no intervention in the market system it is unlikely that industrialisation will expand beyond import substitution of a limited range of consumer goods.

It is usually the case prior to integration among third world countries that the prospective members are at differing levels of development and stages of industrialisation. One consequence of the total removal of barriers to trade under these circumstances is a tendency towards concentration of industrial activity in a limited number of geographical areas. Industrial plants are not homogeneously distributed in any economic area, but tend to concentrate in certain regions, producing 'growth poles'. The main feature of a growth pole is the dynamic inter-action between production and the generation of savings, technological development and external economies. By imposing their growth rate throughout their zone of influence and by their dynamism they attract factors of production from other regions. The geographical location of these growth poles is originally determined by such factors as communications facilities, infrastructure and important natural resources. In terms of the efficient allocation of resources the existence of growth poles may be optimal but with the

associated distribution of perceived costs and benefits it may be unacceptable to some of the member countries especially those with little or no industry. This presents a dilemma, as the most efficient way to maximise the regions growth rate may be to allow plants to establish themselves according to free market principles with the consequent risks of polarisation. On the other hand, countries do not readily accept the concentration of economic activity, particularly industry, beyond their frontiers in some other member country and so urge the need for a degree of decentralisation and geographical distribution of plants, even if this prevents the region as a whole from attaining the highest possible growth rate. Furthermore, the distribution of income is closely correlated with the distribution of industrial activity so the distribution of industry will have a negative economic impact on non-growth-pole areas. As growth poles tend to sustain and reinforce their growth there will be an increasing tendency toward polarisation of industry and income.

Although theory would indicate that free market forces produce the most efficient allocation of resources, to build an industrial base this system will favour those states (or regions within a state) that already have an advantage through existing infrastructure and supporting industry.

Any attempt to extend the industrial base will not only require the creation of new skills but, unless the developing country has its own capital goods industry, will involve the importation of necessary investment goods and machinery. Apart from loans and aid, foreign exchange sufficient to finance these imports will have to be earned by the export of traditional products. It was found in the case of Latin America in the 1950's that the import capacity ceased to grow at the rate needed to finance the expanding cost of industrialisation. Not only will Third World countries have to face the problem of polarisation of industrial activity within the region but their ability to extend the industrial base will be limited by the ability to earn foreign exchange from traditional exports.

Associated with the expansion of the manufacturing sector may be a contraction in the agricultural sector caused by various factors including the expected gains from working in the industrial sector and a bias toward industry in new investment. This can lead to a decline in the output of this important sector that may restrict both the growth of regional demand and the ability of the region to produce sufficient food for local demand. Continued deterioration of agriculture will inevitably lead to the use of scarce foreign exchange to import food rather than on capital and other imports.

Free trade within a third world grouping will therefore tend to increase inequality within the region. Although in theoretical terms this geographically unbalanced growth may achieve overall regional growth, in practice it has tended to produce tensions within regions that have eventually led to the breakup of attempts at integration.

An integration program based solely on the freeing of trade will not ensure a fair distribution of the associated benefits and costs. This is a problem of the misapplication of an approach to a situation in which the desired results are effectively different from those of the theory.

> 'Those who would entrust the fate of a customs union of countries in the process of development to the forces of free competition are endeavouring, quite superficially, to extend to the rest of the world doctrines based on certain historical experience accumulated in very limited fashion and under substantially different circumstances by the economically advanced countries'. 30.

Section 3.5: The Role of Economic Integration in the Third World

It is generally recognised that the orthodox theory of economic integration, concerned with the attainment of static efficiency through the reallocation of a given stock of factors of production in response to a change in relative prices, may not always correspond with economic development objectives. Although the significance of integration for the

30. Wionczek (1966b) p.10

third world lies in potential dynamic effects[31] and 'prospective gains from rationalising the emergent structure of production',[32] it is also accepted that a theoretical case for integration has not been established. From both the free trade and protectionist approaches to integration it has been shown that there are more efficient methods of achieving stated objectives. For example, although a customs union may be more efficient in creating an industrial base than national protectionism, it would be more efficient still to use export subsidies. However, to judge the merits of economic integration we have to be aware both of the economic objectives and the available methods of gaining these objectives. In many cases the choice of framework is perceived as being between national and regional protection.

At the most general level, the objective of economic integration is to promote economic development; more specifically, three broad key areas can be identified.

1. The creation and growth of an industrial base including heavy capital goods as well as manufacturing.
2. Increasing and improving the skills and employment potential of the population.
3. Development of the agricultural sector as a supplier of inputs to and as a market for the products of the industrial sector, as well as providing a secure source of food supply.

Although industrialisation and development should not be equated, the two processes are closely associated and 'in another sense industrialisation denotes a set of policies

31. These dynamic effects include those associated with mastery of new technology, learning how to use it, adapting it and stretching it. The direct effects would be reflected in higher productivity resulting from use of the particular technology, but much of the impact spills over into related activities. 'The cumulative sequence of technological changes which have been observed to follow the establishment of a new activity may be more important than the initial establishment of the activity'. See Westphal (1981) p.7. Westphal discusses dynamic effects in the context of infant industry protection.

32. Robson (1980) p.146.

which, more than any other broad set of policies is seen as a means towards economic development'.[33] In most cases economic development involves structural changes which transform a country from a predominantly agricultural society to one with a bias toward manufacturing. Whatever the causality between industry and economic development, industrialisation is recognised as the most important dynamic factor in the process of accelerated economic development and growth; it 'usually provides a focal point in the development strategy of developing countries[34], and very few countries have developed without industry.[35]

> 'Apart from a handful of oil-rich countries, the most rapidly growing developing countries have been those that, without neglecting other sectors have achieved the most efficient and rapid growth in manufacturing industries. While some developing countries have benefited from the ownership of rich raw material resources, industrialisation has had a much greater impact on their style and standard of living'. 36.

Industry has been perceived as a path to greater political and economic independence, providing employment, raising productivity and living standards as well as inducing 'necessary and desirable changes in social and cultural attitudes and institutions through the "modernising" impact of imported organisational methods and technologies'.[37.] Industrial investments tend to have more potential for backward and forward linkages than other sectors of the economy, as well as providing inputs to and being a source of demand for the agricultural sector.[38.] Industrial activity is particularly conducive to the creation of inter-

33. Sutcliffe (1971) p. 3
34. Ghantus (1982) p. 24
35. See Sutcliffe (1971) p. 67
36. Hughes (1980) p.12
37. Colman and Nixson (1978) p. 180.
38. All of these points are discussed and challenged by Sutcliffe (1971) chapter 3.

industry and inter-sectoral linkages and hence provide 'growing points' in the economy.

Although industry has been presented as a crucial component of development this does not imply that it can be considered as a development strategy on its own. If anything, emphasis on industry should be interpreted as a priority rather than an alternative to agricultural development.[39].

Conceptually, third world countries have at least two (not necessarily mutually exclusive) approaches to foster economic growth and development;[40] the inward-looking autarkic path and the outward-looking path of export expansion, thus presenting 'a choice between producing goods for overseas markets (export-led growth) or for the domestic market (import substitution)'.[41]

The inward oriented approach is closely associated with import substituting industrialisation, involving policies designed to encourage indigenous development forces within the national framework. This is achieved primarily by policies encouraging the establishment of domestic industries behind protective barriers, thus allowing the economy to gain the benefits of employment, alleviation of balance of payments constraints and as a method of accelerating industrialisation. Emphasis on import substitution reflected the postwar view that the prospects for export-led growth were unfavourable, in the case of primary products because of slow growth in demand and historically deteriorating terms of trade, and in the case of manufactured goods because of the barriers to trade with the industrial countries, and the cost of subsidies necessary to support infant industries.

39. Sutcliffe (1971) p.72. And as shown by Sutcliffe, all of the advantages of industry can also be attained in agriculture.

40. Neither of these on their own has proved a general method of successful industrialisation, and in practice neither approach would be considered in isolation.

41. Colman and Nixson (1978) p. 187

Import substitution as a path to economic growth at the national level has faced several constraints. First, it has been constrained by the size of domestic markets that have limited the benefits from economies of scale and the extent of product specialisation that allows the manufacture of parts, components and accessories on an efficient scale. In most cases import substitution has not significantly alleviated foreign exchange constraints as the process has tended to replace one type of import for another.[42.] The ability to continue importing, especially capital goods, machinery and raw materials has emerged as a serious constraint.

> 'At the beginning of the 1950's, the process of import substitution in the field of consumer manufactures in the larger countries of Latin America had just about reached its limit, and the import capacity of almost all the republics in the region ceased to grow at the rate needed to finance the expanding cost of industrialisation. This last phenomenon is owing, among other causes, to the exceedingly rapid technological progress made by the industrially advanced countries'. 43.

The smaller an economy the more severe these constraints and the higher the costs of protecting 'infant industries', the more restricted the possibilities of establishing industries catering exclusively for domestic demand.[44.] Finally, industrialisation based on import substitution implicitly assumes that imports are the most suitable area for industrial specialisation without taking into account available resources and potential areas for creating a comparative advantage.[45.]

42. For example, replacing consumer goods by capital goods.

43. Wionczek (1966b) p.3.

44. Domestic demand is likely to be reduced further as higher costs and prices caused by tariff protection will in turn lead to a reduction in market demand unless price elasticity of demand is zero.

45. Suitability of products for import substituting industrialisation is largely based on the fact that demand already exists. But part of this demand may be specifically because the product is an import - for example foreign luxury goods.

As an approach to development, import substituting industrialisation based on the national market alone is not a feasible option for the majority of third world countries given the high costs of protection, the market size requirements and the restrictions on choice likely to face consumers.[46].

The outward oriented path is based on policies designed to encourage growth through export expansion, either by relying on free market forces or by encouraging certain export industries with subsidies and other methods of support. First, the laissez faire approach would imply the production and export of labour or resource intensive commodities. This would constrain the third world to concentrate on areas of production determined by historical comparative advantage. A country's comparative advantage could be changed by appropriate policies of export subsidies and grants, but based on the export market which may only allow the development of a limited range of products (or product groups) rather than a broad industrial base. This may restrict future options for the direction of development.

Whichever approach to export expansion is chosen, the economy (or sector of the economy) is relying on the export market, in particular on the willingness of the industrialised countries to allow third world access to their markets. In this context account has to be taken of the history of both non-tariff-barriers and the escalating tariffs that have faced third world exporters. Finally, account has to be taken of the finance required to subsidise industries until they are producing at minimum cost outputs, until the workers have been appropriately trained and until the new products have established themselves in world markets.

It is in the context of the common economic objectives and constraints facing the third world that economic integration is important as an alternative development

46. A further critique of import substituting industrialisation can be found in Sutcliffe (1971) p. 260 and Colman and Nixson (1978) p. 193

strategy lying between export expansion and national protectionism. Those nations attempting industrialisation at the national level face constraints of market size that limit both the scale of operations and thus the benefits of cost reduction, and the breadth of industry that could be supported by a larger market. On the other hand those nations concentrating on export expansion face problems of market access as well as the costs of subsidising the export sector.

Economic integration can provide an alternative path, incorporating aspects of both import substituting industrialisation and export expansion in terms of the protected regional market and the removal of restrictions within the region, as well as providing a framework for development and industrialisation policies.[47] As such, economic integration can no longer be viewed simply as an alternative to free trade; rather the choice is 'between the national protectionism of each country and integration - in other words, regional protectionism'.[48]

Economic integration therefore provides through market extension and protection important preconditions that can aid development, in particular the opportunities to exploit economies of scale as well as those associated with time.

One of the major obstacles facing third world industrialisation has been market size constraints[49] that have restricted the benefits from economies of scale. If certain areas of production are to be efficient some minimum economic size may have to be attained. In the manufacturing of intermediate products and durable goods in particular, efficient operations require large-scale production. Economies of scale

47. See Linzano (1976) p. 276. Industrialisation will not necessarily occur just because the conditions are favourable (e.g. market size) but will require planning and direction.

48. Linzano (1976) p. 277.

49. The size of the market is determined by a variety of factors including the size of the country, per capita income, income distribution, population density, transportation costs, level of protection and the accessibility of export markets.
Also see Sutcliffe (1971) Chapter 6.

refer to falling costs of production per unit of output as the level of output increases. In general, the larger the market (or demand available) the larger the scale of production the market can support and the lower the unit costs.

Economies of scale can arise both internally and externally to the firm or plant. Internally they are realised from the division of labour, the integration of production processes, increasing returns to scale and indivisibilities in the use of machinery. External economies of scale are associated with social overhead capital and perhaps more importantly for industrialisation, with the effects of one investment on the profitability of other investments; the larger any one firm, the more likely it is to be able to support ancillary industries.[50] We also have to take into account the possible benefits of both the concentration and overall size of an industrial base.

According to Sutcliffe (1971) engineering and cost studies have shown that the characteristic static average cost curve for modern industrial products is one which falls over a large range of output. Empirical evidence is lacking in this area, and although it is reasonable to accept that increasing returns to scale are important and obtainable this will depend on the production techniques used and on the specific industry concerned.[51]

The removal of intra-union tariffs and the imposition of a common external tariff provide the member countries with a potentially larger market. But, for this potential to be realised needs more than the removal of restrictions and the automatic forces of the free market system. Economic integration 'cannot guarantee an enlargement of the market for industrial products; it is simply permissive and may have to be reinforced by numerous items of government

50. For a more extensive discussion see Sutcliffe (1971) Chapter 6.

51. For example economies of scale are important in the Petroleum and Steel industries.

policy'.[52] In other words integration provides a framework that allows market extension, but any gains will depend on the existence of potential economies of scale and whether regional policy allows the freedom of movement of the factors of production as well as of final products.

The protection provided by economic integration may also permit the attainment of dynamic economies associated with new industry which has no inherent disadvantage but only a present inferiority of acquired skills and experience. There is an expectation that over time the costs facing the industry will fall as the necessary skills and experience are acquired.

In the words of J.S. Mill,

> 'The superiority of one country over another in a branch of production often arises only from having begun it sooner. There may be no inherent advantage on one part, or disadvantage on the other, but only a present superiority of acquired skill and experience. A country which has this skill and experience yet to acquire, may in other respects be better adapted to the production than those which were earlier in the field... But it cannot be expected that individuals should at their own risk, or rather to their certain loss, introduce a new manufacture, and bear the burden of carrying it on until the producers have been educated up to the level of those with whom the processes are traditional. A protecting duty, continued for a reasonable time, might sometimes be the least inconvenient mode in which the nation can tax itself for the support of such an experiment'. 53.

There are those economies that are internal to the firm, where it is assumed that costs fall the longer a firm has been in production. There is a learning process over time such that,

> 'when factors of production are engaged in producing output in a particular year two products really result, visible current output, saleable currently on the market, and the invisible accumulation of experience and knowledge, in fact the creation of human capital. The process of learning is a form of investment which builds up a stock of productive capital'. 54.

52. Sutcliffe (1971) p.230.

53. Mill J.S. as quoted in Corden (1978) p. 248.

54. Corden (1978) p. 250.

Learning may be acquired at any stage of the production process and involves for example, market familiarisation, quality improvements in the product and gaining of experience by workers and management. Experience is accumulated over time and the firms efficiency improves, resulting in falling costs of production (or increasing quality). It is important to note here that this argument does not depend on the scale of operations but the length of time production has been in progress.

We can also consider dynamic economies that are external to the individual firm. 'In the dynamic growth context "external economies" are effects which one investment project has on the profitability of another'.[55] Specifically, the production of one firm may create a capital asset the product of which is freely available to another firm. Under these conditions the first firm should be encouraged to produce an amount of the asset that takes into account its marginal product to the second firm.

External dynamic economies include labour training where once workers have been trained in the use of specific machines, as well as developing 'a willingness to submit to the disciplines and rigours of work in factories and life in cities',[56] they are not usually bound to any particular firm and so may change employment if they currently receive less than their marginal product. Externalities will also exist when knowledge is made available to all firms , but at a cost to only one of them. This includes creation of new technology or the adaption of given techniques to local conditions.

Although the training of labour and the acquisition of knowledge is desirable from a social point of view, individual firms may be unwilling to make the necessary investments unless they were awarded protection or subsidies.

We can also consider the interdependence of investment decisions. If current market prices do not accurately reflect future as well as present demand and supply conditions

55. Grubel (1966) p. 333
56. Corden (1978)

investments made on the basis of these prices will not maximise the social return to resources. It may be the case with two industries that are complementary, that the more one of them expands the more the other will be able to expand. Although returns from an investment made in either of these industries may not be profitable, if the investment decisions were coordinated, simultaneous investments in both industries could result in higher rates of profit.

These dynamic effects are more closely associated with industry rather than integration, but these dynamic effects may be obtainable within the integration framework and will be determined by the extent to which new industry is encouraged and the degree of protection given the economy. These benefits are derived from the establishment and survival over time of industries, but for the small developing countries market size restrictions may in fact be a problem that could be solved within the regional framework. Although these arguments are independentof scale, it is likely that the larger scale and breadth of industrial base that an integrated market can support, the greater the dynamic benefits accruing to industry.

The discussion has focused on necessary preconditions for regional industrialisation. Economies of scale and dynamic economies require market extension and protection over some period of time, both of which can be provided in the integration context; free movement of trade within the region creating a larger market and the common external tariff (common protection) the time required for dynamic economies to become effective. These preconditions are largely 'permissive' in providing the environment within which industrialisation can be pursued. Economic integration also creates other conditions and effects that aid regional economic growth.

Integration of production allows access to a larger natural resource base, providing a more diverse range of inputs, that in turn, through backward and forward linkages allows a broader range of outputs and value added.

At the regional level this enhances the breadth of potential comparative advantage. With market extension, there will be greater scope for other input supplying and output demanding industries to be economically feasible. It is important that industries that can create forward and backward linkages be encouraged rather than basing industrialisation on 'enclave' or 'screwdriver' activities that may not be geared toward the needs of the region and contribute low value added without necessarily providing linkages with the rest of the economy. Economic integration can provide the framework for an integrated industrial base that may not be feasible at the national level. A broader industrial base also provides potential for the development of more skills, both managerial and technical. Although many skills can be acquired through the education processes, use of these skills and 'learning by doing' are also essential elements.

Development of an adequate infrastructure at the regional level may be more effective than at the national level. In particular transport and marketing facilities are notoriously underdeveloped in many third world regions. By nature of their development within the colonial framework, transport systems have tended historically to be geared toward trade with the industrialised countries, local transport systems being inadequate to the extent that regional trade may be restricted. Development of this type of infrastructure should enhance the prospects for improved trade and development and competitiveness of local industries within the region. Pooling of resources in other areas including a regional university and research and development institutions geared toward the needs of the region are potentially important within integration. Although this type of cooperation may not usually come under the effects of economic integration, the framework may aid those projects that have potential long term effects for regional development.

Enlargement of the market within an integration framework will tend to eliminate risks and uncertainty regarding foreign transactions. Greater knowledge of each others

markets and, for example, the bringing together of businessmen, will help in creating a more optimistic climate of expectations, especially if the integration framework is viewed as being long run. Better contacts and the security of the regional market will help in encouraging higher levels of complimentary investment and act in creating or aiding the process of discovering new investment opportunities. As a result new and more efficient productive capacities and higher levels of income will be generated, and hence greater demand for a broader range of goods and services. An improved investment climate will also help in encouraging foreign investment that may be more conducive to the development of the region.

Integration can act as a framework for the development of common policies (political and economic) toward the rest of the world. As such, the total may be greater than the sum of the parts in bargaining power vis-a-vis other economic groupings and international organisations. This is relevant to the political and economic independence of the region in having greater control over the direction and type of development. For many third world countries this aspect is particularly important.

All of these effects are potential and the economic integration framework allows their exploitation. But some degree of intervention will also be required. In particular, development of an integrated industrial base will require regional planning that should be reflected in national plans. Some form of allocation of industrial plants may be necessary to overcome potential polarisation, and allow the smaller members of the grouping opportunities in industry. In some of the smallest third world economies, development of a broad industrial base may be almost impossible. This may result from lack of natural resources or very small populations so that apart from traditional cottage industries and small scale farming, any other form of industrialisation that is not capital intensive may be restricted by market size, available labour force and infrastructure. It is likely that plants or factories that are established will rely to a considerable degree on the export market. For these economies, the region can provide an important market

as well as allowing them to partake in industrial processes. In these cases linkages between the various parts of the production process will be of paramount importance. In all areas of development including the basic agricultural exports on which they rely for most of their export earnings (and which are subject to the movement of international prices) these countries will rely on the regional market as a source of demand and aid if they are to diversify their economic structures.

Planning will also be required to establish the areas of potential comparative advantage within the region and take measures to ensure the development of these areas, providing the support necessary for establishment of industry. A similar process will be required in the agricultural sector, creating a balance between regional food supply and cash crops as well as integrating agriculture into the industrialisation process.

Section 3.6: Conclusion

In this chapter we were ultimately concerned with the role of economic integration in the third world, and the extent to which the traditional theory of economic integration could provide a useful basis for analysis of third world integration. Establishing a theory relevant to the particular cases and problems being considered is important, because the methods of evaluating the effects of integration and the actual effects we look for will be derived from theory.

The traditional theory of economic integration was concerned with the attainment of static efficiency and welfare gains and losses arising from varying degrees of specialisation resulting from the reallocation of given inputs of resources and shifts in the existing trade patterns under static assumptions. However, the preconditions existing in the third world do not generally correspond with those expected in the model and required for successful integration. Furthermore, the assumptions made effectively discounted the basic problems that concern the third world,

and the theory did not address the question of how the process of integration would dynamically change the structural conditions of production and technology, the composition of investments and the capacity to absorb externalities.

The role of economic integration in the third world has to be viewed in the broader context of economic development. The complexity of the development process, and the associated political and other 'non-economic' aspects, means that the role of economic integration may not be easily separated from overall development. We suggest that economic integration should be viewed in terms of a framework for development policies at the regional level. It provides an alternative to nationally based import substitution or export-led strategies and helps to overcome some of the basic constraints facing development by providing the framework for the development of an interconnected regionwide industrial base. In the short run economic integration creates the preconditions that allow the exploitation of economies of scale and dynamic effects associated with industrialisation. It creates a potentially larger resource base that within the regional context can be the basis of a broader and more efficient industrial base. It also provides a framework for other forms of cooperation - in infrastructure, common services, education, research and development, etc. - as well as increasing bargaining power in international negotiations and providing a suitable framework for the receiving and using of aid. Economic integration in the third world should not be constrained to 'negative' integration nor should it be viewed as an alternative to other development policies, rather it should be approached as a catalyst that creates conditions conducive to regional development.

Finally, by approaching integration from the economic point of view, we are only taking into account one part of the overall process of integration and development, whereas many of the effects and the rationale for integration may be non-economic in nature and outside of the traditional framework.

Based on this approach to the role of economic integration in the third world we are able to examine the extent to which methods of evaluation are able to isolate the effects of integration. In chapter four we discuss the approaches to evaluation used in other studies and suggest an alternative approach for evaluating economic integration in the third world.

CHAPTER FOUR

Empirical Evaluation of Economic Integration

Section 4.1: Introduction

Although the bulk of the literature on economic integration has been devoted to providing a theoretical rationale for the establishment of integration groupings, 'it seems to be generally agreed that an a priori judgement regarding the net effect of customs unions on trade flows cannot be made'. (1) As we are dealing with a theory of second best it may be impossible to provide an unambiguous rationale without invoking the conditions of a particular case. It would seem therefore that proving the relevance of economic integration will rely on empirical evaluation.

In common with many other areas of economics, appropriate methods of evaluation have not always developed along with the theory. (2) In part this can be explained by the continued dominance of the main theoretical framework in determining what the most important effects of integration are and how they will manifest themselves. (3)

Evaluation is not just an academic exercise to 'prove' the validity of a theory but is of very real and immediate importance for those countries considering participation in a regional grouping as well as indicating

1. Balassa (1967)
2. For example Mayes (1982) p.28, 'It is a common finding in economics that the development of the theory on a particular topic and the development of empirical research have pursued rather different courses. It is, however, difficult to think of a better example of this divergence than the study of the effects of economic integration'.
3. Principally, the effects of economic integration on trade patterns thus reflecting the comparative static reallocation of resources and production patterns resulting from relative tariff changes.

the progress of and acting as a guide for the future direction of groupings already in existence. At the most general level the purpose of evaluation is to judge whether or not the desired objectives of integration are being achieved and at what economic cost.

The criteria by which integration is judged will depend on the factors considered important within the theory, and by the objectives and the definition of integration. (4) As such 'there is probably no single measure that is adequate to portray all the facets of a broad concept like economic integration. It is important to be explicit about what aspects of the concept one's measuresare designed to tap'. (5)

In chapter 3 we outlined a possible role for economic integration in the third world that presented integration as a framework for development rather than as an objective in itself. The purpose of this chapter is to derive an approach to evaluation that would isolate those effects of integration that are important in the third world.

We first discuss the different approaches to evaluation - the degree of economic integration, the effects of economic integration, and the distribution of the costs and benefits of economic integration. However, all of these approaches are partial in nature, and to an extent are restricted in being able to totally isolate the effects they are looking at. However, this limitation on evaluating integration has to be accepted as inevitable in any empirical work.

Based on these methods we suggest a broader framework for evaluation based on the role of economic integration in the third world. This involves a range of possible effects including those on trade patterns, the

4. For example in Kunz (1976) p.105, 'We deduced the meaning and progress of economic integration in the CMEA primarily be reference to the basic interests of socialism'.

5. Nye (1971) p.31.

development of industry, the effects on employment and income, price and cost changes, and external economies. It is to be hoped however that this framework will present a broader perspective on the progress of economic integration.

It is admitted though, that to attempt the full cost benefit analysis would be a very large task and we do not attempt it here. Rather we concentrate on one aspect of it, associated with trade patterns. We present a trade flow model to be used in isolating the effects of economic integration on trade flows, with the ultimate objective of assessing the extent to which the trade flow model can isolate these effects. We then discuss two other approaches - changes in income elasticities of import demand and the share of expenditure in apparent consumption - that will be used to crosscheck the results of the trade flow model and to supply additional information on the effects on trade flows.

Finally, we should be aware that our judgements will not be based on a value free method of evaluation. An important consideration in any empirical work is the stress that is automatically placed on measureable factors. Obviously this will be a problem in any quantitative study, but we should also bear in mind as far as possible the importance of qualitative factors that cannot be easily measured.

Section 4.2: The Degree of Economic Integration (6)

The first general area of evaluation to be considered is the degree of economic integration. As will become increasingly evident, the interpretation given to any particular aspect of evaluation will be determined largely by the particular objectives and approaches of an integration project. We can define the degree or progress of integration as being measured with reference

6. This section and section 4.3 and 4.4 are based to a large extent on Robson (1980) chapter 11.

to the deviations from the aims of the integration process. (7) In this way we run a smaller risk of using inappropriate indicators in judging the progress of integration. For example, if we define integration as the abolishment or suppression of discrimination between member states, (8) then the relevant indicators would include the mobility of factors of production and commodities and the equalisation of prices within the region. (9) On the other hand, in Third World groupings for example, abolition of discrimination may not be an objective, rather positive discrimination in the allocation and direction of investment into particular industries or geographical areas may be a major objective. In thiscase aggregated mobility of factors of production is unlikely to provide any indication of the degree or progress of integration.

According to Robson, (1980) the majority of quantitative studies concerned with the degree of economic integration have not been concerned with the institutional conditions themselves but with the effects they have on the mobility of factors of production and commodities, that is with the effects of the degree of integration rather than the actual degree of integration. In particular this indicator has been based on trade flow statistics, and the relative shares of intra and extra trade flows in total trade.

Results have shown that for developed country

7. See Lundberg (1976) p.115

8. See Balassa (1966) for a range of definitions of integration.

9. However, Nye (1971) p.28 states that 'it is interesting, from this perspective, to note that prices of many goods and factors continued to differ considerably among the EEC countries even after the abolition of tariffs and quotas. And it was long after the formation of the United States that there began to be an equalisation of factor prices among the different regions of the country.'

groupings, principally the EEC and CMEA, intra union trade has accounted for over fifty per cent of total trade, and in the case of the EEC intra trade has grown more rapidly than total trade. (10) On the other hand, third world groupings have not appeared as successful when judged by this indicator, with intra-bloc trade stagnating at low percentage shares of total trade.

This type of measure does not indicate the extent to which any changes in intra trade are a reflection of integration rather than other factors. Furthermore, 'the degree of integration is a relative concept that refers implicitly to the extent to which the potential for profitable integration is actually exploited. Actual trade and capital flows throw little light on the opportunities that remain to be exploited'. (11) This measure also ignores the problem of relative economic development. In the case of the EEC the members started from a reasonably well developed economic structure and expansion in trade was rapid. On the other hand most Third World countries did not trade extensively with each other before integration and started from a less established industrial position. In general the members of the grouping are likely to be exporting the same types of commodities, based on primary and primary-related activities. Expansion of regional trade will probably be based on new activities, in particular of manufactured goods, which will not be revealed in trade flows until these new industries have been established. Furthermore, regional trade in the third world tends to be limited by underdeveloped infrastructure and marketing facilities.

Expansion of trade is not the only indicator of the degree of integration. Equalisation (or at least convergence) of factor prices and associated factor

10 See Robson (1980) chapter 11.

11. See Robson (1980) p.165

movements will also indicate progress in the removal of obstacles between economies, although changes in factor movements may still take place even if barriers remain unchanged.

Measurement of the degree of integration is not particularly useful in isolation and has to be related to both the objectives and methods used in an integration programme.

Section 4.3: The Effects of Economic Integration

Most emphasis has been placed on evaluating the effects of integration on the net welfare position of the group. This has been principally, although not exclusively, in terms of the impact of integration on trade flows as revealed through the traditional concepts of trade creation and trade diversion. Following Viner (1950), trade creation has been equated with 'benefits' and trade diversion with 'costs'. (12)

In general, the earlier studies tended to be ex ante estimates of the integration induced effects usually based on the example of the EEC. (13) Ideally, the estimation process should involve a forecast of trade in the post integration period assuming the union would not be established and a forecast assuming it would be established. The main problem however is estimating the hypothetical outcome of trade with integration without having had any prior experience of integration.

However most ex ante studies have tended to base their estimates on actual trade information from a base year. For example the most often quoted ex ante approach as followed by Verdoorn (14) was based on the actual trade matrix for 1951. Verdoorn was estimating the effects of the elimination of internal (union) tariffs on trade flows and on the terms of trade. By assuming a price elasticity of demand for imports from all sources and a share elasticity of imports from non-members the effects of the tariff and price changes on the domestic demand for

12. From Robson (1980) p.12, Trade creation refers to a union induced shift from the consumption of higher cost domestic products in favour of lower cost products of the partner country, and trade diversions refers to a union induced shift in the source of imports from lower cost external sources to higher cost partner sources.
13. For example Verdoorn (1954), Janssen (1961) and Krause (1963a and 1963b) as quoted in Balassa (1967).
14. As quoted in Robson (1980) p.168.

imports from different sources was estimated.

Obviously the accuracy of these forecasts will depend on the reliability of the estimated elasticities. Verdoorn's elasticities were based on aggregate measurements, although it is more desirable that separate import demand functions should be estimated for individual commodity categories. In addition we have to question whether or not the effect of a tariff is the same as that of an equivalent price change. It has been argued (15) that tariff elasticities substantially exceed the usual import demand elasticities. The removal of tariffs may be perceived as irreversible and non-linearities due to threshold effects may cause the import response to a large price cut to be proportionally larger than the response to a small cut.

Other approaches to ex ante estimates of integration effects have not been so widely used but include (i) the survey method which would involve for example asking industrialists how they expect changes in trade barriers to affect their sales in the domestic market and the markets of the partner countries, and (ii) the direct method that analyses domestic and foreign data relating to costs and prices in the countries concerned. (16)

In general, ex ante studies have by and large been concerned with the effects on trade of changes in relative prices caused by the removal and realignment of tariff barriers, with little attention paid to other possible effects that could result from increased competition, economies of scale and so forth.

The majority of empirical studies have been ex post in nature and as such have been able to use historical data relating to existing integration groupings. This reduces the element of speculation with the estimation of the hypothetical outcome assuming integration has not occured being the major problem. In common with ex ante studies

15. Waelbroeck (1976) p.90
16. See Robson (1980) p.167 for further discussion of these two methods.

though, the basic effects of integration are analysed in terms of its total impact on trade flows. Most of the estimation is carried out by the residual imputation approach under which the effect of integration is computed by comparing actual trade to an 'anti-monde' constructed by projecting trade flows under the assumption that no integration had taken place. (17)

The early ex post attempts (18) at estimating the 'integration effect' were based almost exclusively on the available trade flow data. These studies either compared pre and post integration shares of trade with union and non-union partners, any changes being attributed to the effects of integration, or extrapolated pre-integration matrices to create hypothetical non-integration trade flows.

The validity of this type of trade share approach depends on the assumption that market shares would have been stable in the absence of integration. This implies there were no 'significant changes in tastes, technology, costs and competitiveness, or in commercial policy other than tariffs or exchange controls'. (19) To take account of these non-integration induced changes one approach suggested is the use of a 'control group' that is subject to the same growth effects but is not influenced by integration. It may then be assumed that in the absence of integration the members of the regional grouping would have experienced similar growth rates. (20) Although this modification may produce more dependable results it is still being assumed that the union members and the 'control group' would have grown at the same rate in the absence of integration.

17. See Waelbroeck (1976) p.90
18. Early ex post attempts include Waelbroeck (1964) and Verdoorn and Meyer zu Schlochtern (1964) in Balassa (1967).
19. Robson (1980) p.170
20. Waelbroeck (1976) p.91

A further problem has been the separation of the 'integration effect' into trade creation and trade diversion. In attempting to provide an indication of trade creation and trade diversion, Waelbroeck (21) suggested the use of regression analysis, explaining trade flows by gross national product and geographic distance. The equation was specified as:-

$$x_{ij} = c\, c_i\, c_j\, (y_i^a\ y_j^b\ ) / r_{ij}^d$$

where:- x_{ij} is exports of i to j,

$y_i\ y_j$ is GNP of countries i and j,

$c_i\ c_j$ are their export and import parameters indicating the 'openness' of their economies,

r_{ij} is the geographic distance between i and j,

c is a scale factor.

Assuming that the coefficients c, c_i , c_j would remain unchanged over time, Waelbroeck estimated a and b from cross-section data of world trade in 1958 and from this extrapolated world trade from 1958 to 1962. He was then able to compare these hypothetical trade figures with actual trade and thus estimate the various components of the 'integration effect'.

This study is principally criticised (22) on the use of average income elasticities of export supply and import demand, calculated in a cross section analysis of all trading countries and then applied to the case of a small subgroup (the customs union). Furthermore changes in opposite directions at the individual commodity group level may be concealed within an aggregate measure.

Truman (23) on the other hand approaches the problem of measuring the integration effect more directly, using changes in domestic production as well as in international trade flows, thereby being able to establish the size and

21. Waelbroeck (1964) in Balassa (1967)
22. Balassa (1967)
23. Truman as described by Robson (1980) pp.171 - 174.

direction of the domestic production effect, necessary for estimating trade creation. The analysis is based on shares of expenditure in apparent consumption where;

$$C = Y - X + M_p + M_w$$

where:- C is expenditure on apparent consumption,
Y is gross domestic product,
X is exports,
M_p is imports from partners,
M_w is imports from non-members.

The following trade shares can then be defined:

1. Domestic share $DS = (Y - X)/C$
2. Partner share $PS = M_p/C$
3. Non-member share $WS = M_w/C$.

In any one year $DS + PS + WS = 1$,

and $$\Delta DS + \Delta PS + \Delta WS = 0.$$

Changes from one period to the next were then defined as:

$\Delta PS > 0$ indicates gross trade creation,
$\Delta DS < 0$ indicates net trade creation,
$\Delta WS < 0$ indicates trade diversion

Gross trade creation is measured by the increase in trade among members of a grouping regardless of whether this trade is replacing domestic production (trade creation) or non-member trade (trade diversion). Trade creation is measured by the fall in the domestic share and hence the replacement of domestic production by both partner and non-partner sources. Trade diversion is measured by the fall in non-partner trade and hence the replacement by domestic and partner sources.

An alternative approach suggested by Balassa (1967) is based on the comparison of ex post income elasticities of import demand in intra-area and extra-area trade for periods preceding and following integration. These elasticities were defined as the ratio of the average annual rate of change of imports to that of gross national product. Assuming income elasticities of import demand would have remained unchanged in the absence of integration, the following are defined.

1. Gross trade creation as a rise in the income elasticity of demand for intra-area imports.
2. Trade creation as an increase in the income elasticity of demand for imports from all sources of supply.
3. Trade diversion as a fall in the income elasticity of demand for extra-area imports.

By comparing the relationship of internal and external trade to GNP between the pre-integration and the post-integration periods, it is asserted that this method abstracts from changes in the growth rate of national income, and provides comparable estimates of trade creation and trade diversions. But, it is largely concerned with the static effects and as admitted by Balassa no account is taken of the effect of integration on economic growth. When applied to extra-area imports this method has the drawback of ignoring the growth of total imports, consumption or income within the grouping. It is therefore not possible to say how far changes in the growth rates of extra-area imports is the result of integration or of these other factors.

In general the methods used to determine the 'integration effect' have been based on the residual or difference between actual and predicted trade flows. The residual can be attributed to:

(i) autonomous changes in prices in the supplying and importing countries,

(ii) changes in income, consumption or some other variable representing macroeconomic activities,

(iii) changes in variables other than income or consumption and autonomous price movements,

(iv) revision of tariffs, ie. integration,

(v) residual errors due to the random error term in the estimating equation, misspecification of the form of the equation, errors in the data, omission or misrepresentation of certain variables etc.

Most of the studies above have only taken into account number (ii), and have assumed the remaining difference is due to number (iv), ignoring (i), (iii), and (v).

Finally, we can consider an approach that attempts to measure the effects of integration directly by using a trade flow model (24) in which dummy variablesare incorporated to represent the effect of integration on intra-union trade. In this approach trade flows are determined by national income, population and geographic distance between the two trading partners. The equation also includes a dummy variable for trade flows between union members (intra-union trade). Using cross-section data over pre- and post-integration years, a series of parameter estimates are produced that can be considered in terms of whether their pattern indicates the expected cumulative growth in intra-union trade. By estimating the preference or integration effect as an independent variable in a multiple regression equation, one is able to hold constant other major variables which affect trade. The preference parameter can be used to estimate gross trade creation, and to provide information useful in determining when the first integration effects occured.(25)

Unfortunately, in this form of equation, extra-union trade is used as the 'normaliser' (26) so that a further dummy variable for extra-union trade cannot be included. Therefore, to measure trade diversion, use of the residual method (27) was resorted to. But, this type of approach has perhaps come the closest in providing a more direct measurement based on trade flows as well as being able to

24. This type of method was used by Aitken (1973) and Pelzman (1977).

25. Pelzman (1977) was able to determine the start of integration effects statistically.

26. Basically, trade between the union and the rest of the world is used to represent normal trade thus precluding the addition of a further dummy variable to measure the trade diversion effect. This is discussed in Chapter 5, when we attempt to overcome this problem.

27. As only the gross trade creation effect could be estimated directly trade creation and trade diversion had to be based on the difference between actual trade and hypothetical trade.

show when integration first had any effects.

At this stage it is worthwhile discussing one of the attempted evaluations of economic integration in the Third World. This is interesting in that although the method of estimation may be similar, the interpretation (in welfare terms or in terms of desired objectives) does differ.

Willmore (1975), using methods similar to those of Balassa (1967) compared the pre- and post-integration elasticities of import demand for the CACM. It was assumed that in the case of integration among developing countries there would be an attempt to accelerate import substituting industries and this would be reflected in trade diversion. In effect this is a reversal of the traditional welfare roles played by trade creation and trade diversion. But, the expected trade diversion result may also be counterbalanced (at least in the short run) by increased imports from the rest of the world of necessary capital goods and raw materials required in the early stages of industrialisation.

Willmore expands the categories defined by Balassa to include trade suppression (high cost domestic production replacing low cost non-member production) and external trade creation (low cost non-member production replacing high cost domestic production). He also defines:

1. Gross trade creation as the sum of integration induced imports from partners that replace domestic production and the external trade creation that results in the replacement of domestic production by imports from non-member countries.
2. Gross trade diversion as the sum of intra-regional imports that replace extra-regional imports and the domestic production that replaces extra-regional imports.
3. Trade creation refers to the replacement of domestic production by imports from partners.
4. Trade diversion refers to the replacement of imports from non-members by imports from partner countries.

This section has covered the main methods used in estimating the effects of economic integration. These

have tended to be based on trade flow data although measurement of domestic effects has been incorporated directly by Truman. Trade flows are the principle form of transaction between separate economies (the basic unit in integration), and as such their measurement and changing patterns are important in the context of the evaluation of economic integration. However, it should also be remembered that trade patterns do not reveal all of the effects of integration on a region.

Section 4.4: The Distribution of the Costs and Benefits of Integration

The previous section was devoted to the impact of integration on the regional grouping as a whole, but from the point of view of the success of integration, members are likely to be more interested in the distribution of the gains and the costs of being a member. As discussed above there is a possibility that integration schemes will tend to favour the more advanced members who benefit from the liberalisation of trade and the expansion of markets. (28)

Attempts at measuring the distribution of costs and benefits have been characterised not only by reference to trade flows, but to national income, distribution of industrial activities, operation of common services and the pattern of tax revenues.

From the point of view of income or employment the benefits and costs have been calculated in terms of the increase in national income due to new firms being established behind tariff barriers, other members benefits being assessed by the increase in exports to the first country. Benefits have also been determined in terms of the increased aggregate value produced by the expansion of intra-area trade and the consequent increase in national income and the volume of employment. (29)

28. This is associated with polarisation effects for example. See Unctad (1973) p.10.

29. For example Brown(1961) and Segal (1970) discussed in Unctad (1973).

Another approach has been to estimate what the development of a country's industrial sector would have been if there had been no integration and to compare this with the actual integration.

Newlyn (1965) assesses hypothetical industrial development by analysing the country's imports and the minimum size of plant required to produce the imported goods. Hazelwood (1965) attempted to measure the benefits and costs of common services as a method of distributing costs and benefits of an integration scheme among the member countries.

Attempting to measure the distribution of the costs and benefits means that in many cases the analysis is partial, only covering specific features of integration such as industrial development, intra-area trade, common services or fiscal revenues.

In attempting to apply a single criterion for benefits and costs to all member countries alike, there is a danger of overlooking the fact that benefits and costs may not mean the same thing to all countries. Different levels of development, the special circumstances of each country and national objectives in an integration scheme are factors which entail a different assessment of benefits and costs for each country concerned.

Section 4.5: An Alternative Framework for Evaluating Economic Integration

Perhaps the main feature of the attempts to evaluate integration discussed above is their partial nature, first, by concentrating on one indicator and second, by the assumption that these indicators are capable of reflecting the full impact and effects of economic integration on a region. Ideally, evaluation of economic integration should take the form of a full cost benefit analysis, in which the partial analysis of trade flows, of the development of industry, of employment and income effects, etc. are only individual parts. It is also important that the stated objectives and the methods of attaining them should be taken into account. At the same time,

because of lack of measureable data and an inadequate time frame, a full cost benefit analysis may not be possible, and in most cases we do have to rely on partial methods. Finally, we should remember that welfare judgements will be subjective and all we can really report is to what extent the data indicates the progress of economic integration as reflected by a finite and often a restricted number of sometimes conflicting indicators.

Ideally, a broader method of evaluation incorporating more than one measurement is required, although any particular method may not be directly relevant at any one time. For example, the information derived from changing trade patterns may be limited in the short run for developing countries, (30) whereas in the longer run or among the industrialised countries trade may reflect the majority of the effects of economic integration on a region, and it is also likely that negative trade creation and trade diversion effects in the short run will be outweighed by positive effects in later years.

For these reasons we must not rely on one method of evaluation but must be able to transfer and aggregate various different forms. We should also not expect to obtain one overall figure for the degree of success of economic integration. What will result is a vector of attributes, both quantitative and qualitative that can be used as the basis for an overall assessment, but that will not provide an aggregated numerical evaluation of the net benefits of economic integration.

In this section we attempt to outline some of the desirable features and methods of an evaluation framework based on the role of integration in the third world. In this study we are interested in particular in one aspect of the cost benefit analysis associated with trade flows,

30. Expansion of regional trade will probably be based on new activities, in particular of industrial goods, which will not be revealed in trade flows until these new industries have been established.

so that the evaluation of Carifta/Caricom in chapters 5 and 6 should be viewed as only one part of a full evaluation of the region.

a Trade Patterns

In any form of economic integration it is likely that there will be changes in patterns of trade among the integration partners (intra-trade) and between the members and the rest of the world (extra-trade). These changes are described in terms of trade diversion and trade creation. Within the traditional framework, trade diversion is usually considered a cost of economic integration associated with the protection of the regional market, whereas trade creation, a benefit, is a result of the freeing of trade within the region. These associations (trade creation equals benefits and trade diversion equals cost) are usually only valid when the region is fully developed and does not have the problem of underutilisation of resources. When we consider the case of developing countries we have to take into account effects other than changes in relative prices that are associated with trade creation and trade diversion.

Although trade diversion implies that the resource cost of a product facing consumers within the region is now greater than in the rest of the world, we also have to take into account the employment effect of increased production as well as the positive effect on associated industries.

Trade creation is usually associated with trade that did not exist before, being created within the region, although it may also imply one of the members expanding production at the expense of a partner country. Associated with this will be increased efficiency in the production of the goods as well as a loss in employment in the other member country.

Measurement of trade creation and trade diversion is necessary, but the results have to be interpreted in light of all the potential effects and not just in terms of

resource costs.

Trade patterns should also be analysed by types of products. Trade diversion in certain goods that encourage growth and the development of an industrial base are more important that trade diversion in luxury goods that are generally considered a waste or misallocation of resources. Increased trade in capital, manufactured and semi-manufactured goods are especially relevent in reflecting progress in integration industries within the region.

Many of the effects that would be observed through trade patterns are not likely to appear in the short run, especially if there is little intra-union trade before economic integration. The more important patterns of trade may not emerge for many years, partly because the types of goods to be traded, especially manufactures, depend on the development of the infrastructure and building of plant. In trade terms therefore, economic integration may appear to produce negative or no effects, when in fact progress is being made.

To interpret changing patterns of trade, information relating to the types and locations of industries is required. Given this information trade creation and trade diversion can be interpreted in terms of positive and negative effects.

b Regional Industrial Base

One important aspect of economic integration is the building of an integrated regional industrial base. This usually involves allocation of industries or processes among the member countries taking into account the trade-off between factors and ensuring a fair distribution of benefits. The industries can be divided by the degree of dependence on the existence of a regional market.

(i) There are those industries that because of their minimum economic size, require a guaranteed market greater than the national market. These can be further divided into those that require a market greater than

that of the largest member state, and so would not be economically feasible for any of the regional partners to support nationally and can therefore be called integration industries. There are also those industries that require a large market but could be supported by one of the larger members nationally, but may have been allocated to a smaller member that will have to rely on the regional market. Although this industry may not be considered an integration industry in general, to the member concerned it is.

(ii) There are those upstream and downstream industries that support or provide inputs to or markets for the integration industries. Some of these may be considered as part of the integration industry. Of these there will be industries that depend on the integration industry for their market and would not be feasible without their existence. There will also be those that do not depend totally on the integration industry.

(iii)The third category includes those industries that could develop without either the integration industries or the regional market, but they will benefit from the income effects of the other categories.

(iv) Finally there may be industries that are totally unaffected by economic integration.

The creation and growth of all of these industries will depend to some degree on the existence of the integration framework. Over time some of these effects may be reflected in changing trade patterns, but to judge the progress of the industrial base it will also be necessary to analyse key industries in terms of the role of economic integration in their development.

If the industries are categorised by their dependence on the integration process as judged by their minimum economic size, actual and potential regional and market size, as well as potential costs, then it will be possible to estimate their impact on various aspects of the economy.

c Employment and Income Effects

For every industry created or expanded in size we will be able to estimate certain characteristics.
(i) Direct employment and income effects. There will be an expansion or creation of employment which may be a mixture of nationals, regional nationals and foreigners. For the first two groups there will be a direct contribution of income, training and experience to the economy. The third group will contribute toward the running of a plant but the income effect will depend on the proportion of their income repatriated to their home countries. Furthermore for all groups the income effect will be reduced by their propensity to import from outside of the region. Strictly speaking we should also consider the costs of providing infrastructure and facilities that are necessary for the maintenance of foreign workers, but in many cases this may be impossible to calculate separately from the requirements of the rest of the population.

It may also be the case that the expansion of an industry in one of the regional members may cause a contraction of a similar industry in another member. In this case we have to take into account the associated employment and income losses as well as the differences in costs of production between the two potential producers.

With the expansion of one industry there may be an expansion in other input supplying industries that will give rise to employment and increased income. We would therefore have to estimate the contribution of the expansion of one industry on the growth of others.
(ii) Indirect employment and income effects. Increased income generated in the major industries will have an impact on other unassociated industries, via the income multiplier, especially on the food, housing and general consumer goods industries. This effect will be reduced by the degree of consumers propensity to import, and whether the goods demanded by new income earners are

produced within the region. With increasing income, new demands may be created and provide opportunities for the establishment of consumer industries within the region.

d Price and Cost Changes

With the creation of new industries within the region especially those that require protection under infant industry criteria, consumers are likely to face, especially in the earlier years, costs greater than those of a comparable good imported from outside of the region. These costs have to be taken into account as a contribution toward increased costs of inputs to other industries as well as creating a fall in real income for the region.

e External Economies

Creation of an industrial base gives rise to external economies that will be available to any other firm established in an industrial area. For example within an industrial area there are skilled and trained workers, banking facilities, roads, ports and availability of required inputs. On the one hand an industrial base is likely to create these externalities, but on the other it is also likely to concentrate industry in growth areas that will attract other firms. This concentration of industry can create tensions within a country between high and low growth areas, and within a region between those members that are successful in attracting industry and those that are not. These economies have to be considered and set against the fair distribution of industry within a region.

Finally, an estimate of the overall effect of economic integration on a region can be obtained by comparing the actual situation to an hypothetical state of no economic integration. This can be done based solely on the trade flow model, assuming that changing trade patterns reflect all of the integration effects. It can also be estimated, given potential growth of

national demand and export opportunities, which industries would have been feasible without integration and the associated employment, income and growth effects, by estimating the state of the economy under the assumption of no integration and comparing this to the actual situation.

All of the possible measures suggested above are partial, and have to be used together as the basis for the overall evaluation of the effects of economic integration on a region. At least they should serve as a reminder of other factors that should be taken into account.

This provides us with a basic framework for evaluating economic integration in the third world. However it is only tentative and there are obviously other factors including aspects of social and political integration that should also be taken into account. In the next section we develop the trade flow aspect of the evaluation framework, in particular the isolation of the effects of economic integration on trade flows.

Section 4.6: Proposed Methods of Evaluation of Economic Integration

Given both the limitations in available data and size of an overall cost benefit analysis project, evaluation of integration usually has to based on a limited number of partial analyses. In particular those based on trade flows tend to be the most feasible given the accessibility and development of the raw data. If greater reliance is to be placed on this approach the models have to be further developed and more open to alternative interpretations, especially as the objectives and methods of integration do not always correspond with the given theory.

In this section we discuss in more detail the trade flow model approach to evaluating economic integration which would be one part of an overall cost benefit study. We attempt to develop and adapt the model that is to be

used to isolate the effects of economic integration on trade flows, particularly in the context of the third world. It is found that there are certain features of development that require a reinterpretation of the model; some of these are discussed below.

To provide a means of cross checking the results of the trade flow model and to provide additional information for the evaluation of integration we also discuss two additional methods. The methods to be used in this study are therefore largely based on trade flows although the domestic sector is also incorporated in one method, and other less quantitative data is used in the analysis. The three approaches discussed below are (i) the trade flow model; (ii) changes in income elasticities of import demand; and (iii) the share of expenditure in apparent consumption approach.

a Trade Flow Model

Many studies of the effects of economic integration are based on variations of trade models, either in the form of import demand equations or as trade flow models, therefore such approaches to estimating the effects of economic integration are implicity testing theories of trade. It is especially important to have a model capable of describing trade so that the hypothetical 'antimonde's' of trade with or without integration can be accurately estimated. In other words the model used should be capable of interpreting the determinants of trade under different conditions. For the results to be comparable, the same general form of model is desirable. The early forms of gravity model (31) were concerned with just such a general method that allowed for the 'dissimilarities between different countries in the economic preconditions of external trade' (32). Although

31. For example Poyhonen (1963a and 1963b) and Pulliainen (1963).

32. Poyhonen (1963b) p.69.

the different conditions between countries was allowed for in these models, by the use, for example, of national income of trading partners, the inability of such a general model to capture all of the differences between countries may be reflected in the estimated coefficients. Although these estimated coefficients may in some cases be 'unexpected', of the wrong sign or not significant, rather than reject the results and model an attempt should be made to interpret them in the light of differences between economies, or of their stage of development. A more in depth study may reveal important points about third world trade.

As we are dealing with a broad range of countries, the trade flow model is by necessity very simplified. The trade flow model is primarily concerned with the size of trade flows between countries in a general equilibrium framework and not with the composition of trade as defined by comparative advantage.

We assume that the size of a trade flow will be determined by:

(i) the total potential supply of exports of a country,

(ii) the total potential demand for imports of a country;

(iii) factors that restrict trade between countries. (33)

For an individual economy, the potential aggregate supply available for exports, and demand for imports is reflected in the relative magnitude of the foreign to domestic sector share in national income. In other words, consumption of domestic goods plus exports will equal total income, and the greater the share of exports in income the greater the relative size of potential export supply. Therefore to determine the size of trade flows we need to know what determines the size of the foreign sector share.

Although the foreign sector share is determined by

33. This approach to trade flows has been developed by Linneman (1966).

many factors, the size of the economy or market will be a major determinant. In general the larger the market size the broader the range of industry that can be supported domestically, the greater the opportunity to exploit economies of scale; and the more opportunity there is for product differentiation. A large 'continental' economy (like the USA, USSR or the EEC) tends to have a wider range of available resources, and a more balanced economic structure, so that to a greater extent demand can be satisfied from domestic production. The opposite is true for small countries where a narrower resource base and market size limits on the exploitation of economies of scale mean that a broad economic base cannot be supported by the domestic economy. As a result 'most small countries have both a high ratio of exports to GDP as well as a concentrated composition of exports and a diversified structure of imports. Such countries trade more and are also more specialised than larger ones'. (34) It follows that the larger the geographic size and population of a country, the closer it can approximate the continental pattern of growth.

In this model we use population as an absolute measure of the size of the market and as a determinant of the foreign sector share. Furthermore, we can argue that with a given population a certain percentage of productive factors are diverted to production for the home market and therebyreduces the factors available for production of tradable goods.

These 'home' goods may be divided into those that are non-tradable, either because they cannot enter into trade (eg. services and infrastructure) as well as those goods that have to be produced close to the point of consumption (for reasons of after sales maintenance for

34. Demas (1965) p.23. Demas discusses in detail the differences in types of development possible between small and large countries.

example). There may also be those goods that are tradable but tastes demand that they be produced domestically if possible.

Therefore, for every trading country there will be some minimum share of resources devoted to production for the domestic market, and as population increases there will be a greater share of resources devoted to home production.

Second, the ability of a country to produce all its requirements will be limited by the size of the market and high costs involved in finding substitutes for certain production factors or conditions (eg. technical skills). To the extent that population determines market size, the greater the population the more lines of production in which the country will meet the minimum market size for efficient market production, and so the greater range of goods that can be produced domestically and for domestic consumption

Taking into account those factors that are used in production for the domestic market exclusively, there will be a reduced quantity of factors available for production of exportables. This can be represented diagramatically by an inward shift of the production function.

Therefore with a given level of income, production of tradable goods as a share of total production will tend to fall as population increases, thus implying a negative relationship between the share of the foreign sector and population size as shown in diagram 4.1 with x/gdp representing the relative size of the foreign sector. (35)

Similarly, on the demand side the share of the foreign sector (imports/GDP) is hypothesised to vary inversely with population. In part this is due to the suggestion that as population increases, and economies of scale can be reaped in more lines of production, more of local demand can be supplied domestically. Of course this

35. This hypothesis is suggested by Linneman (1966), there is also supporting evidence in Chenery and Syrquin (1975).

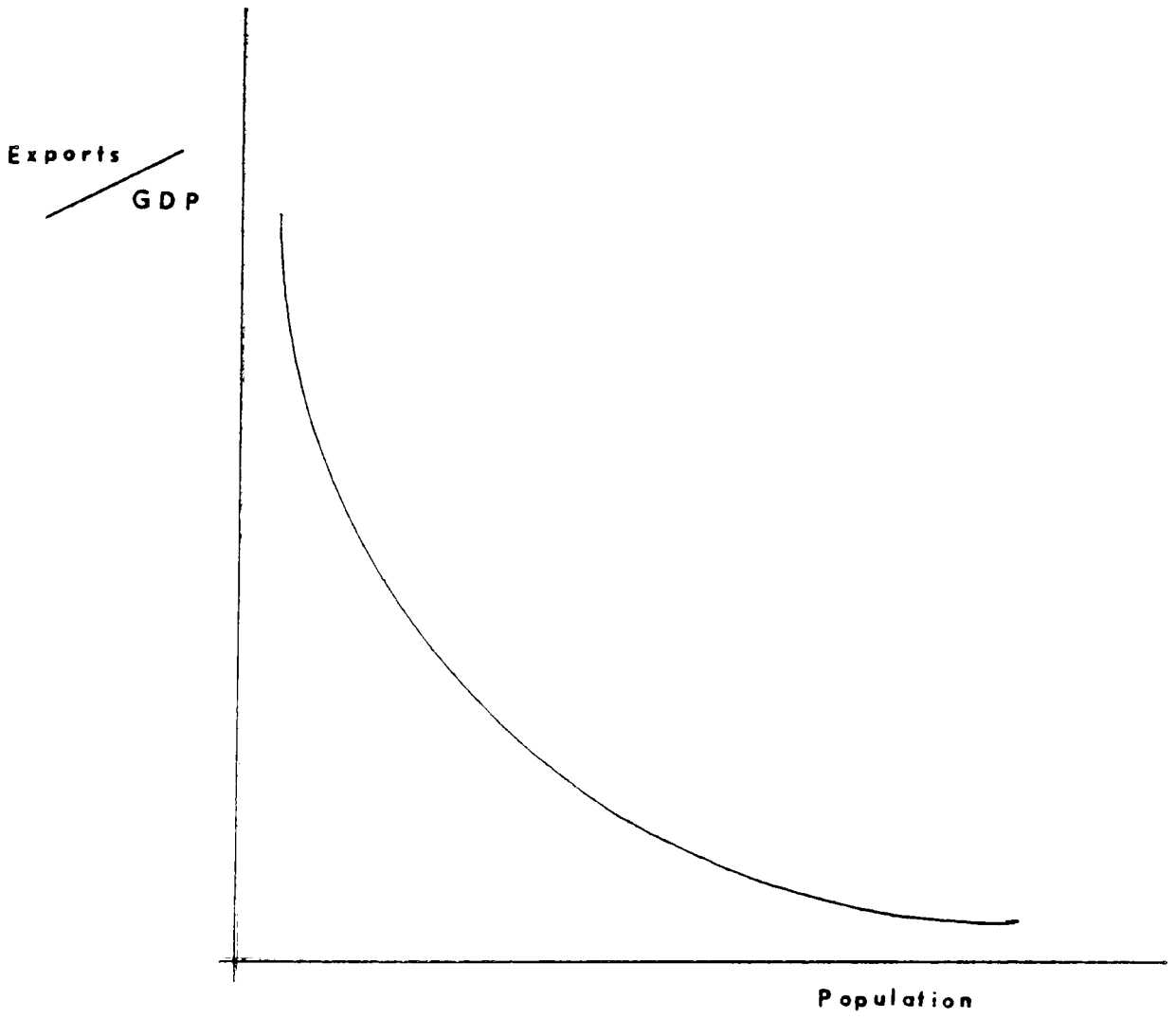


DIAGRAM 4.1

may be modified by the utility structure, for example if nationals prefer imports over domestically produced goods then the relationship may be reversed.

Linneman (1966), tends to play down the importance of per capita income, arguing that an increase in per capita income with constant population will increase market size, increasing demand for goods already produced domestically, but also increasing demand for goods that cannot be economically produced domestically. In this case the net effect may well be zero - a priori we do not know which way it would go and so assume an average effect of zero.

As we are concerned with the size of trade flows we include national income as a scale factor representing total factor endowments or economic capacity, so that for a given population the larger is GDP the larger are total imports and exports.

Finally, we can consider the third factor, trade resistance. For a country engaged in trade, various factors will reduce trade from its full potential. These can be divided into natural and artificial trade impediments.

(i) Natural Trade Impediments

These include the costs involved in transporting and marketing a product in another country. Transport costs depend on weight, bulk, value, physical characteristics, distance, mode and speed of transport, the character of the route etc. We also have to consider dynamic factors based on the time element involved in transportation. This is relevant not only for perishable goods but because it also implies losing the possibility of immediate adaption to changing conditions and because it will increase irregularities in supply. The longer the time of transportation, the greater the necessary stocks of the products in the importing country and the greater the risk of losing profitable opportunities. Finally we have to consider the 'economic horizon' or 'psychic distance'. Perfect knowledge of the market does not exist, either

for producers or for consumers. Trade is likely to be restricted between those countries that are not familiar with each others business information, laws, habits, language etc. In general these factors are associated with and can be proxied by the geographic distance between trading partners.

(ii) Artificial Impediments

These are largely the result of government action and include tariff barriers, quantitative restrictions, preferential treatment and customs unions. These can be approached on the basis of an assumed regularity of their trade-reducing effects for the world at large. Thus the trade flow between any pair of countries is subject to 1. an average trade reducing effect which is the same for all trade flows, and 2. a random deviation from the average trade reducing effect, that reduces the trade flow either more or less than usual. In general these factors will be included in the form of for example dummy variables representing above average trade flows between members of a customs union.

Thus the trade flow can be derived. (36)

$$Fi = f(Yi, Ei, Ui, Ri)$$

$$Vi = g(Fi) \quad Vi = h(Fi)$$

$$\text{and } Vij = h(Fi, Fj)$$

$$= h\, f(Yi, Ei, Ui, Ri), f(Yj, Ej, Uj, Rj)$$

where:

F = general equilibrium value of the foreign sector.

Y = gross national product.

E = resource endowment.

U = utility or demand structure.

R = general resistance to trade.

V_i , V_j = value of exports and imports.

V_{ij} = trade flows between countries i and j.

i = subscript indicating country i.

36. This derivation is based on Leamer and Stern (1976) p.152.

or in terms of the suggested variables of the analysis:

$$Xij = f(Yi,Ni,Yj,Nj,Dij)$$

where:

Xij = actual trade flow.
Y = GNP.
N = population.
D = distance between the trading partners.

and where the coefficients of Yi and Yj are expected to be positive, and Ni,Nj,Dij are expected to be negative.

Linneman (1966) admits that this type analysis is based on the assumption that every country has reached the optimum or equilibrium situation corresponding to its production conditions and population size, or that it will adapt itself to changing conditions without any time-lag. In the short run though, the ratio of domestic to foreign market production may deviate from its long run equilibrium value, for example if there is a period of export induced growth. Furthermore, technical progress, transfer of knowledge and new discoveries allow a continuous process of change and adaption in production and trade. But although the static equilibrium pattern of the analysis will never be realised, the approach is useful as a simplified model that is general enough to cope with all the countries.

Although this model has been used in various studies, (37) these have generally been in the context of (or the analysis has been dominated by) the industrial countries. These economies are at similar levels of development and are likely to exhibit similar utility structures and face the same general levels of tariff and other barriers to trade. In this study we are interested in trade within the Third World, and between the Third World and the industrial countries. In particular we are concerned with the smaller developing countries that tend to have relatively large foreign sectors and may exhibit certain

37. Aitken (1973) and Pelzman (1977).

characteristics that require a modification of the underlying economic model. The individual production functions in this case will have a bias toward exportable goods for a variety of reasons.

Potential export supply may be dominated by the exploitation of specific resources and commodities, for example sugar, bauxite and petroleum. The development of these resources has in some cases been the result of colonial history and links within the Commonwealth. This particular skewness in their production structure is also a reflection of their underdeveloped status.

Small population sizes may act as a constraint on their producing a broader range of products (especially in manufacturing) for domestic consumption, based on economies of scale arguments. There may be some threshold below which increases in population do not improve their ability to benefit from economies of scale. Increases in population will increase the level of demand, and as this demand cannot be satisfied domestically by reducing trade (due to the narrow resource base) exports may have to be increased to satisfy demand through increased imports On the other hand economies of scale may be reaped if the market size can be extended through exports, though this may still restrict production to a narrow range of products. It may also be necessary to import semi-processed materials (as the economic base may not be large enough to support the necessary input industries), so this process will also be associated with a larger foreign sector. Finally these products may not be generally competitive (or may face high trade restrictions) within the international market, and this trade may be more closely associated with the region. This is especially true within the integration framework where different parts of an industry are established in different member countries.

Trade with the industrial countries will therefore reflect the traditional pattern, but intra-regional trade will be modified as above. But within the region greater

populations may mean a greater ability to trade in more products rather than less, and as a limited range of products is produced trade will still be important.

Thus so far the determinants of the foreign sector and of trade flows are not as clear cut as in the traditional model and the determinants may have to be categorised according to intra and extra union trade.

Trade resistance will also reflect the same impediments to trade flows as in the traditional model although these effects may be more pronounced. In particular historical trading ties with the U.K. and the U.S.A. have established well defined and developed lines of communication, whereas trade within the region has been restricted by inadequate transport systems and infrastructure (ports and shipping routes), and so this can at the aggregate level produce the paradox of the greater the distance the greater the trade.

On the other hand trade flows may be augmented by traditional ties such as membership of the Commonwealth, which according to Linnemanns study was particularly important for certain Caribbean countries. For developing countries then, although the model is similar to the traditional approach, disaggregation by country groups may reveal different forces at work.

b Methods of Evaluation

The three methods of evaluation are outlined below, and will be discussed more extensively in the context of the results in chapter five. It should be stressed here that their purpose is not to quantify the net welfare effects of integration, but rather to provide an indication of the path or progress of integration in the West Indies, and to see to what extent these approaches can adequately evaluate the experience. It would be hoped on the basis of these results that these partial measures could be incorporated into a full cost benefit analysis of integration.

(i) Trade Flow Model

The model to be used is based on the discussion above, with income and population representing country parameters, and geographic distance accounting for restrictions on the full potential of trade flows. The role of these variables has been discussed above.

It is normally assumed that the trade flow model will capture the majority of changes in trade, and that over time these coefficients will be stable. Under these assumptions, the inclusion of a dummy variable for preference (intra-union trade) effects should capture the growth in intra-union trade associated with a regional grouping. In the case of the EEC for example the preference variable coefficient was close to zero prior to integration and thereafter was positive. (38) Unfortunately, due to the nature of the dummy varible, (39) other effects (extra-union trade) could not be estimated directly and were produced by the residual method. A similar approach is used here, although one set of equations includes dummy variables for both intra and extra union trade. In this study as the economies under consideration are undergoing structural changes associated with development, the estimated coefficients are unlikely to remain stable. This reflects both the growth process and the possible threshold effects associated with market size discussed above. As these threshold effects are overcome at the regional level, we may expect to see changes in the estimated coefficients that will reflect the importance of integration on trade flows and how they are determined. This will involve use of information other than the parameter values of the preference variables. The coefficients and their changes over time of the other variables will be important in understanding the integration process.

38. See Aitken (1973)
39. See footnote 26 and chapter 5.

The trade flow equations will also be estimated at the country level, to establish whether the determinants of trade are different for subgroups of the sample.

(ii) Elasticities of Import Demand (40)

This method is based on a comparison of ex post income elasticities of import demand in intra and extra area trade, preceding and following integration. The elasticities are defined as the ratio of average annual rate of change of imports to that of GNP for intra and extra area trade. This approach abstracts from changes in growth rates of national income and provides comparable estimates of trade creation and diversion. It will provide a comparison with the trade flow model as well as extra information useful in interpreting the progress and effects of integration. Furthermore by using this approach we can disaggregate both by country and by commodities thereby observing the effects of integration on the SITC categories.

It should be noted that this method is concerned with static effects and does not take into account directly the effects of integration on economic growth.

(iii) Expenditure Shares Approach (41)

This approach involves estimating the share of domestic, partner and non-partner production in a members consumption, changes in these indicating the effects of economic integration. As it is a direct measure involving domestic production it allows the establishement of size and direction of the domestic production effect and so further extends the information available on the integration effects. Its importance lies in including changes in domestic production that may not be adequately reflected in the trade flow models.

40 Based on Balassa (1967)

41. Based on Truman as described by Robson (1980).

c Measurement of Integration Effects

Traditionally the concepts of trade creation and trade diversion are employed when estimating the welfare effects of integration, with trade creation being equated to benefits and trade diversion to costs. These definitions can be extended to include production and consumption effects as suggested by Meade (1956). In orthodox theoretical terms, trade creation refers to the replacement of high cost domestic production by lower cost production in a partner country and trade diversion as the replacement of a lower cost producer outside the union by a higher cost source within. Economic integration is evaluated in terms of the relative magnitudes of the costs and benefits associated with trade creation and diversion. Orthodox theory is based on the reallocation of resources resulting from changes in relative prices as is made clear in the standard definitions above. The essential feature of trade creation and diversion is the relation of pre to post integration costs. Thus referring to trade creation implies a change in trade flows to a lower cost source, and trade diversion as a change to a higher cost source. This depends though on the definition of costs. If we refer to costs as being all those factors which determine whether or not one good will be preferred over another (eg. quality, delivery date, servicing facilities etc) then by definition demand will be from the least 'cost' source. If we consider cost as basically the delivery price then it is no longer clear that this will be the case. Using delivery cost, all we can really say about trade diversion is that it is a move from a non-union to a union producer, and trade creation is a move from domestic production to a partner. Finally, even if it could be shown that the move was from a low to a high cost, or high to low cost producers (however defined), it may be incorrect to automatically assume that the move was caused by the changes in relative prices. In the third world countries it may also be the case that knowledge of prices (or lack of it) will render the market less than perfect and trade flows will not be based on full

information, and be further biased by political factors determining trading partners.

Apart from the problems discussed above we also have to take into consideration the partial nature of trade creation and trade diversion, measured by changing trade patterns as a reflection of net welfare effects. As way of example the trade creation effect of a partner replacing domestic production does not necessarily take into account the loss in income and employment in the home country, nor of the effects of this loss in income on the other domestic industries.

From the point of view of this study it does not seem reasonable to attempt to measure welfare effects or to attach benefits to trade creation and costs to trade diversion. This is based on the partial nature of these welfare measurements and on the assumption that trade will reflect the most efficient pattern given trade barriers etc. It seems more sensible in this framework to describe trade in terms of movements between sources rather than between more of less efficient producers. In that case we will also have to redefine our concepts of trade creation and diversion in terms of changes in source of supply rather than in terms of more or less efficient producers. This does not exclude discussion of the probable welfare effects, which now have to be determined using more information, especially on relative prices over time. But as mentioned before the purpose of this study is not to generate welfare statements (which would require a full cost benefit analysis) but to indicate from avialable information the path that integration has followed as reflected by a limited number of indicators.

We can therefore define the following effects.

(1) Trade creation as the source of production shifting from domestic production to an integration partner.

(2) External trade creation as the source of production shifting from domestic production to non-union producers.

(3) Trade diversion as the source of production shifting from a non-union producer to a partner.

(4) External trade diversion as the source of production shifting from a partner producer to non-union producer.

(5) Internal and External trade suppression as the source of production shifting from union or non-union producers to domestic producers.

Although these definitions do differ in some respects from those used by Balassa and Truman they may give a better indication of the direction and type of net change occuring. In this context, creation refers to a new trade being created and diversion being a change in source, without any welfare assumptions being implied, and to an extent incorporating Meade's production and consumption effects.

Section 4.7: Conclusions

In this chapter we have developed the basis for an approach to evaluating integration. Evaluation of integration using partial measures - such as the effects on trade, the degree of integration or the distribution of costs and benefits - do not provide full coverage of the effects of integration in the third world. Furthermore, it is difficult to make a welfare judgement based on these partial measures. We have therefore outlined a tentative framework for evaluation based on the role of integration in the third world. Basically, this approach involves an extended list of partial methods in an attempt to cover the main effects of integration. In particular we suggest analysis of trade patterns, of the growth of industry associated with integration, of employment and income, and of price and cost changes. The outcome of this approach would be in the form of a vector of attributes that could be used as the basis of a full evaluation of integration. The contents of this framework are not exhaustive and did not include for example aspects of social and political integration.

In this study we concentrate on the trade pattern aspect of the framework based primarily on the trade flow

model. The trade flow model allows a direct estimate of integration effects on regional trade while taking into account the other determinants of trade flows. We also suggested that there are certain features of growth in the developing countries that may require a reinterpretation of the estimated parameters of the trade flow model, this was discussed in section 4.6.

One of the objectives of the thesis is to examine the extent to which the trade flow model can isolate the effects of integration on trade flows. As a basis for this we attempt to evaluate the effects of economic integration on the Commonwealth Caribbean. In chapter 5 we estimate the trade flow model for Carifta/Caricom to obtain an estimate of integration effects on regional trade patterns and on the trade of individual members. The trade flow model is supplemented by two other methods - changes in income elasticities of import demand and the share of expenditure in apparent consumption - which allow us to crosscheck the results of the trade flow model and also to provide additional information on the effects of economic integration on trade.

CHAPTER FIVE

ESTIMATION AND RESULTS

Section 5.1: Introduction

In chapter five the empirical results that are the basis for evaluating the effects of economic integration in the West Indies are presented. The objective of the evaluation is not to produce an estimate of the net gains or losses attributable to integration, but rather to indicate the areas in which economic integration has affected trade flows in the region, and the extent to which the objectives of integration have been achieved. We are also concerned with the degree to which the estimation methods capture integration effects in the third world, and to suggest possible areas of extension and modification that may provide a clearer interpretation of the role of integration in the third world.

Before we can consider estimating the net costs or benefits of economic integration we have to first establish whether the methods used are capable of isolating the effects of integration, and whether these effects can be attributed to integration rather than to other unrelated factors. Although the theories of integration have been extended and adapted for developing countries[1], the empirical measurement has tended to lag behind, perhaps partly because more sophisticated models have generally not produced results that are easily interpreted.[2].

The relationship between trade flows and the independent variables (income, population and distance) may differ from the expected results for a variety of reasons. A developing country's trade and economy may be based on one major commodity (for example in the West Indies these may be

1. See chapters three and four.
2. See Chernick (1978) p. 29, note 6. A trade flow model was applied to the case of Caricom but 'the results, however, were statistically insignificant so that a quantitative balance sheet of the benefits and costs of integration could not be drawn up'.

sugar, bauxite or petroleum), and trading patterns may be determined by historical links and agreements rather than by relative income and population sizes. Furthermore developing countries by their very nature are involved in changing their economic structure, so that their imports need not be directly related to current income and population but to future requirements for development. These conditions could cause unexpected and unstable estimates of the trade flow elasticities.

Data quality also presents a problem in estimation. Although in general trade data is regarded as the best available, quality does in fact vary considerably, and income and population statistics especially over a long period are not always reliable. Errors may occur in the transformation of the data, the use of different accounting methods and whether appropriate exchange rates have been used.[3].

To isolate the effects of integration it is assumed that the major 'event' is the creation of the integration scheme, and it is therefore integration that is the source of changes that do occur. However, for developing countries other factors including recent independence, changes in economic structure, price fluctuations in main commodity exports, world depression, restrictions on third world exports to certain industrial country markets, and changing patterns of tariff and non-tariff-barriers will also contribute to changes in trade patterns. To isolate the effects of integration would therefore involve accounting for all these possible influences, some of which may be indirectly associated with integration. It would be a very large task to perform if it were possible, but by not taking account of all possible influences we can never be fully confident in the results of any one approach.

Three separate measures of the effects of integration are used. This will provide a cross-check of the effects and will increase the information available for evaluating economic integration. Based on these results

3. See Appendix B for further discussion of the data used.

it may be possible to suggest method that could be used in future research to evaluate economic integration in the third world.

The three methods[4] used are:

1. Trade Flow Model. This is a cross section equation estimated annually and takes the form,

$$\log T = \log Y^{a1} + \log Y^{a2} - \log P^{b1} - \log P^{b2} - \log D^{c1} + \log DV^{d1} + CONST.$$

where:- T is the trade flow,

Y is the national income,

P is population,

D is geographic distance between trading partners,

DV is a dummy variable value 2 for intra union trade
1 for extra union trade

CONST is the constant,

a1, a2 - elasticity with respect to exporters and importers income,

b1, b2 - elasticity with respect to exporters and importers population,

c1 - elasticity with respect to distance,

d1 - elasticity with respect to the dummy variable

2. Income Elasticity. This approach is based on the changes in the income elasticity of intra, extra and total imports between pre and post integration periods. The elasticity is calculated as -

$$\frac{\text{average annual rate of change of imports}}{\text{average annual rate of change of income}}$$

3. Expenditure Share Approach. This involves estimating the changes in the share of domestic, partner and non-partner (world) production in a members expenditure. First we define expenditure on apparent consumption as -

$$C = Y - X + M_p + M_w$$

4. See chapter four for a more detailed description of these methods.

where:- C - expenditure on apparent consumption,
Y - gross domestic product,
X - exports,
M_p - imports from partners,
M_w - imports from non-members.

The following trade shares can then be defined:

1. Domestic share DS = (Y - X)/C.
2. Partner share PS = M_p/C.
3. Non-member or world share WS = M_w/C.

In any one year DS + PS + WS = 1
and ΔDS + ΔPS + ΔWS = 0

Changes from pre to post integration periods are defined as:

Δ PS > 0 indicates gross trade creation,
Δ DS < 0 indicates net trade creation,
ΔWS < 0 indicates tradediversion.

Section 5.2: Results of the Trade Flow Model

This section presents the results of variations in the trade flow model as described in chapter four. Because of data limitations[5], the country coverage within the West Indies has been limited to the four more developed countries (MDC's) - Barbados, Guyana, Jamaica and Trinidad-Tobago.[6] The following equations were estimated;

1. Aggregate trade flow model;
2. Intra-union trade only, no dummy variable; for intra union trade;
3. Extra-union trade only, no dummy variable; for intra union trade;
4. TOTAL Exports of the MDC's;
5. TOTAL Imports of the MDC'c ;
6. Trade flow model with separate variables for intra and extra distance;
7. Adjacent year regressions;

5. See Appendix B.
6. The countries included for Caricom's trade with the rest of the world are the USA, the UK, Canada, Venezuela, France, West Germany, the Netherlands and Japan.

8. Trade flow model with extra dummy variable for trade with the UK;
9. Barbados' trade with dummy variable for the UK;
10. Guyana's trade with dummy variable for the UK;
11. Jamaica's trade with dummy variable for the UK;
12. Trinidad-Tobago's trade with dummy variable for the UK;

The individual equations are now reported and discussed in order.

a Equation One (Table 5.2)

The standard trade flow model was estimated for all trade of the MDC's with selected partners over the period 1967 to 1976. As shown by the $\bar{R}^2$ the equation was able to explain between 37% and 46% of the variation in trade flows. This is lower than similar estimates for the EEC.[7]

The elasticities of both the exporters and importers income, a1 and a2, were positive as predicted by theory, but whereas a1 was not significantly different from zero, a2 was significant over the period 1967 to 1972. The elasticity a2 is relatively high in the earlier years (especially when compared to the elasticities in the EEC[8]) but it does decline over time and from 1973 is no longer significant. Taken together, a1 and a2 suggest that the importers income is a more important determinant of trade flows than the exporters income or that demand is more important than supply. The high values of a2 could be caused for example, by the UK, USA and Canada being traditional markets for West Indian exports, and that the MDC's do have a high average propensity to import as indicated by their shares of imports in GDP.

For their given resource endowment as reflected by GDP the MDC's have an export or trade bias[9] determined by their small size and the limited range of products they produce and export. Therefore for a given income their

7. See for example Aitken (1973)
8. Aitken (1973) reports values for a1 lying between 1.05 and 1.2; values of a2 lying between 0.74 and 1.0
9. See for example Demas (1965)

KEY TO ELASTICITIES REPORTED IN TRADE FLOW MODEL RESULTS

INCOME

a1 : Exporters income elasticity of trade

a2 : Importers income elasticity of trade

POPULATION

b1 : Exporters population elasticity of trade

b2 : Importers population elasticity of trade

DISTANCE

c1 : Distance elasticity of trade (except in Table 5.7)
Table 5.7

c1 : Intra-regional distance elasticity of trade

c2 : Extra-regional distance elasticity of trade

DUMMY VARIABLES

d1 : Dummy Variable for intra-regional trade

d2 : Dummy Variable for intra-regional trade in year (t + 1)

d3 : Dummy Variable for extra-regional trade

OTHERS

CONST: Constant term

$\bar{R}^2$: Adjusted coefficient of determination (R^2)

* : Indicates coefficient is significant at the 95% confidence level

( ) : Values in parentheses are t-statistics

Table 5.1

EQUATION ONE

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	d1	CONST	$\bar{R}^2$
1967	1.14	2.13*	-0.08	-1.70*	-0.44	4.94*	-1.17	0.37
	(1.60)	(3.07)	(-0.08)	(-1.88)	(-1.39)	(3.30)	(-0.30)	
1968	0.98	2.39*	0.11	-2.03*	-0.51*	4.59*	-0.14	0.39
	(1.56)	(3.80)	(0.13)	(-2.47)	(-1.70)	(3.20)	(-0.04)	
1969	0.85	2.60*	0.30	-2.33*	-0.38	5.51*	-1.25	0.37
	(1.27)	(3.90)	(0.34)	(-2.70)	(-1.20)	(3.70)	(-0.33)	
1970	0.49	1.79)	0.75	-1.28*	-0.69*	4.67*	-1.48	0.42
	(0.93)	(3.36)	(1.10)	(-1.87)	(-2.66)	(3.70)	(-0.48)	
1971	0.19	1.41*	1.11*	-0.85	-0.67*	4.61*	-2.64	0.43
	(0.39)	(2.90)	(1.70)	(-1.30)	(-2.60)	(3.80)	(-0.90)	
1972	0.02	1.07*	1.41*	-0.38	-0.64*	5.62*	-5.04*	0.44
	(0.05)	(2.28)	(2.34)	(-0.64)	(-2.46)	(4.50)	(-1.69)	
1973	0.32	0.65	0.85	0.08	-0.59*	4.93	-3.43	0.38
	(0.80)	(1.61)	(1.64)	(0.16	(-2.37)	(4.10)	(-1.24)	
1974	0.26	0.46	0.94*	0.42	-0.86*	4.43*	-2.45	0.42
	(0.65)	(1.14)	(1.87)	(0.84)	(-3.73)	(3.85)	(-0.96)	
1975	0.24	0.36	0.97*	0.53	-0.71*	4.96	-3.79	0.39
	(0.60)	(0.91)	(1.97)	(1.07)	(-2.9)	(4.17)	(-1.39)	
1976	0.11	0.39	1.15*	0.52	-0.8*	4.89*	-3.59	0.46
	(o.37)	(1.36)	(2.86)	(1.28)	(-3.7)	(4.66)	(-1.48)	

Table 5.2

levels of exports are relatively high, whereas for the industrialised countries whose economic structure tends to be biased toward the domestic market, the levels of exports are relatively smaller. It is also a possibility among the MDC's that as GDP increases, so does their ability to produce a broader range of products and the smaller is the relative size of their export sector, although this may be counterbalanced by imports of raw materials and capital goods associated with new industries. Together these factors may produce a small elasticity of exporters income that in somecases may even be negative. Therefore, although exports do increase as income increases, there is a much stronger relationship between imports and income.

According to the traditional theory (see chapter four) the population variables are expected to have negative elasticities. However, b1, the elasticity of the exporters population is positive apart from in 1967, lies between 0.1 and 1.4, and is significant over the period 1971 to 1976. This may be accounted for by the nature of the sample chosen, as well as by special factors operating both within the West Indies and between the West Indies and the non-regional trading partners. It does suggest that the larger the population the larger is the foreign sector and hence exports. As this pattern of result is recurring, b1 will be discussed in greater detail below. The elasticity of the importers population, b2, conforms to theoretical expectations and is generally negative, but significant only over the period 1967 to 1970.

Together these two elasticities suggest that the greater the population the more the economy has available for export and the smaller the population the more it needs to import. If this is the case then the relationship between population and the import and export sides of the foreign sector is assymetric.

Distance is included as a proxy for all the factors that may contribute to restrict maximum potential trade flows, and includes transport costs, market knowledge, tastes etc. The elasticity c1 is negative, significant

in 1968 and 1970 to 1976, and has values lying between -0.86 and -0.3.

Over the period the negative effect of distance has tended to increase, possibly because as the MDC's develop and have a broader range of goods to trade, the effects of higher transport costs will become more evident as reflected by the increasing negative value of c1.

The dummy variable is included as a proxy for the trade enhancing effects of integration on the regions trade. Effectively it measures the extent to which the regression for extra trade underestimates intra-regional trade flows. It is therefore assumed that the elasticities of income and population to trade are similar for both intra and extra trade, and will be unaffected by integration (or at least they are affected to the same degree) although other factors cannot be discounted.

The elasticity is expected to be non-significant prior to integration and positive and significant thereafter.[10]. In equation one the dummy variable is positive and significantboth before and after integration. This poses a difficulty in using this information to determine the effects of integration. The possibilities are that (i) effects similar to thoseof integration were evident prior to integration, and are perhaps associated with the region's history of cooperation as well as being a member of the Commonwealth, (ii) that other factorsare the source and integration has had no effect, (iii) that other factors have declined in importance as integration effects became evident, the two creating a balance and (iv) there are other peculiarities in this sample that have created this effect. As this variable is of central importance in the evaluation of economic integration in the traditional sense,it will be fully discussed below.

It has to be established whether or not the determinants of intra and extra trade are similar in all other elasticities apart from the dummy variable and to what

10. This was true for the case of the EEC in Aitken (1973)

extent disaggregation would provide more information. It also has to be established why a1 is not significant, why b1 is positive, whether distance is a greater restriction to intra rather than extra trade, and what the dummy variable is measuring, in particular whether or not it is measuring the effects of integration.

Equations two and three take the same form as equation one but without the dummy variable for intra-regional trade; equation two estimated using only intra-union trade data and equation three using only extra-union trade data.

b Equation Two (Table 5.3)

Equation two is estimated using only intra-union trade data and should indicate the determinants of regional trade flows. By using only intra-union data the overall fit ($\bar{R}^2$) improves dramatically from between 0.37 and 0.41 in equation one to between 0.49 and 0.88 in equation two, and provides evidence for possibly two separate trade regimes, that may have contributed to the high values for the dummy variable in equation one.[11] It is also interesting to note that within the region neither the income nor the population elasticities have the expected signs, and suggests that trade between the union members is determined not only by different factors, but that the factors may act in a different way possibly reflecting both the level of development and the reliance of the members on a limited range of exports.

Contrary to expectations, the income elasticities a1 and a2 are generally negative, but significant in only two years - 1967 and 1968. In both cases they increase from -2 to around zero. This result may be associated with peculiarities of the sample on the distribution of trade. The two richer members - Jamaica and Trinidad-Tobago - depend to a high degree on exports of bauxite-alumina and petroleum. In both cases this trade is directed to markets outside of the region, so that intra-regional

11. This can be tested for by using the Chow test. See for example Maddala (1977) p. 198.

EQUATION TWO

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	CONST	$\bar{R}^2$
1967	-2.06*	-2.20*	4.45*	3.85*	-2.50*	-5.90	0.78
	(-2.59)	(-2.59)	(4.00)	(3.46)	(-5.93)	(-1.51)	
1968	-1.69*	-1.94*	4.45*	3.31*	-2.70*	-5.10	0.82
	(-2.06)	(-2.37)	(3.95)	(2.94)	(-5.74)	(-1.27)	
1969	-0.79	-1.02	2.95*	2.09*	-2.00*	-2.07	0.88
	(-1.47)	(-1.88)	(4.08)	(2.91)	(-6.77)	(-0.82)	
1970	-0.41	-1.32	2.19*	1.20	-1.60*	0.14	0.78
	(-0.71)	(-0.56)	(3.00)	(1.64)	(-4.78)	(0.05)	
1971	-0.20	-0.14	1.83*	1.01	-1.40*	0.41	0.72
	(-0.36)	(-0.24)	(2.61)	(1.45)	(-4.06)	(0.15)	
1972	0.04	0.23	1.45*	0.76	-1.20*	-0.13	0.65
	(0.08)	(0.45)	(2.27)	(1.19)	(-3.29)	(-0.05)	
1973	0.34	-0.05	0.99	0.96	-1.04*	0.54	0.60
	(0.81)	(-0.12)	(1.76)	(1.71)	(-2.83)	(0.20)	
1974	0.43	-0.11	0.96	1.17	-1.16*	0.14	0.52
	(0.78)	(-0.20)	(1.26)	(1.55)	(-2.41)	(0.04)	
1975	0.15	-0.06	1.28	1.25	-1.14*	-0.97	0.49
	(0.28)	(-0.11)	(1.69)	(1.65)	(-2.21)	(-0.28)	
1976	0.23	-0.05	1.10*	1.10*	-1.23*	1.06	0.69
	(0.71)	(-0.15)	(2.31)	(2.29)	(-3.48)	(0.44)	

Table 5.3

trade accounts for a much smaller proportion of their total trade and the same is true for their import requirements - for example capital goods that are not available regionally. On the other hand, Barbados, with a smaller income has to some extent expanded into simple manufactures that depend on the regional market. Taken together this could produce the result that the greater is income the less important relatively is regional trade.

Finally, it is important to note that a1 and a2 are not significant for the majority of the years and it may be the case that income is not a useful indicator of trade within the region.

The elasticities of population, b1 and b2, are more important as not only do they have the wrong sign, but b1 is significant over the period 1967 to 1972 and in 1976 and b2 is significant in 1967 to 1969 and 1976. Of the two, b1 is perhaps the more interesting as it is significant for a greater proportion of the years and is associated with the regions export side. In part these results may be caused by the income elasticity being negative and generally not significant. This would mean that per capita income would still have the correct sign with population acting as a proxy for income. However, it does throw doubts on the expected inverse relationship between the size of the foreign sector and population that is the basis of the trade flow model.

As expected the elasticity of distance, c1,has a greater negative effect within the region than on total trade. This reflects the underdeveloped system of transport and infrastructure within the region as well as a lack of knowledge of each others markets and possibly the limited range of products available or suitable for intra-regional trade. Over time however, the negative effect of distance does diminish suggesting improvements in the regional transport system, knowledge of markets as well as a broader range of products available for trade. In this case changes in the elasticity of distance is reflecting some of the positive effects of integration.

c Equation Three (Table 5.4)

Equation three, estimated using extra-union trade data, is similar to equation one, with comparable $\bar{R}^2$ (0.38 to 0.46), as well as a similar pattern of elasticity signs and of coefficient values. Only the distance elasticity is lower, as expected reflecting the superior transport and marketing facilities of the industrialised countries and that the majority of the West Indian trade flows are of an extra-union nature.

As in equation one, a1 and a2 are generally positive, although a1 is not significant. Over the period 1967 to 1972 a2 is significant and follows the same pattern as equation one, increasing to a maximum (2.82) in 1969 and then declining.

Similarly b1 is positive when significant and b2 negative. It is worth noting that b1 is positive when a1 and a2 are not significant.

The elasticity of distance is significant from 1970, and was on average greater than -1. This is evidence of lower resistance to trade for extra-regional trade flows when compared to intra- regional trade.

Overall, the estimated elasticities in equations two and three suggest that intra and extra union trade could be determined in different ways so that equation one may be restricted in the extent to which it can determine intra-union trade. The fact that differences exist in the estimated elasticities between equation two and three casts doubts on the validity of the dummy variable in equation one as a measure of the effects of economic integration.

As there does appear to be evidence that trade is determined more by the import side than the export side, equations four and five are estimated using the import and export trade data of the MDC's separately, thus enabling us to look directly at the import and export sides of trade. By including a dummy variable for intra-union trade it will be possible to separate the extent to which imports and exports have been affected by economic integration.

EQUATION THREE

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	CONST	$\bar{R}^2$
1967	1.23 (1.59)	2.36* (3.05)	-0.16 (-0.16)	-1.96* (-1.95)	-0.34 (-0.98)	-1.82 (-0.43)	0.38
1968	1.07 (1.54)	2.59* (3.73)	0.004 (0.004)	-2.27* (-2.49)	-0.42 (-1.28)	-0.54 (-0.13)	o.39
1969	0.86 (1.15)	2.82* (3.78)	0.31 (0.31)	-2.59* (-2.66)	-0.29 (-0.86)	-1.70 (-0.40)	0.38
1970	0.51 (0.84)	1.93* (3.16)	0.74 (0.94)	-1.46* (-1.85)	-0.65* (-2.21)	-1.65 (-0.47)	0.42
1971	0.16 (0.27)	1.55* (2.75)	1.18 (1.62)	-1.02 (-1.41)	-0.62* (-2.21)	-2.91 (-0.87)	0.42
1972	-0.08 (-0.14)	1.20* (2.16)	1.55* (2.16)	-0.56 (-0.78)	-0.60* (-2.00)	-5.39 (-1.57)	0.44
1973	-0.26 (-0.54)	0.75 (1.56)	0.94 (1.52)	-0.06 (-0.09)	-0.56* (-1.96)	-3.62 (-1.13)	0.38
1974	0.18 (0.38)	0.56 (1.17)	1.04* (1.73)	0.28 (0.47)	-0.84* (-3.24)	-2.46 (-0.85)	0.41
1975	0.20 (0.42)	0.43 (0.89)	1.02* (1.72)	0.43 (0.73)	-0.69* (-2.47)	-3.79 (-1.22)	0.39
1976	0.03 (0.08)	0.48 (1.26)	1.27* (2.63)	0.41 (0.85)	-0.77* (-3.12)	-3.91 (-1.41)	0.46

Table 5.4

d Equation Four (Table 5.5)

Equation four is based on the exports of the MDC's, so that the export elasticities (a1 and b1) are related only to the MDC's whereas the majority of import elasticities are non-West Indian. Overall this equation is very similar to equation one although the elasticities in equation four are slightly larger.

The elasticity of exporters income, a1, although it does tend to be negative is not significant. For the MDC's one would perhaps expect income to be a function of exports, given the importance of exports as a source of income. As in equation one, a2 is positive and significant over the period 1967 to 1972. The majority of the importers are non-regional, and the results indicate the expected positive correlation between imports and income.

For population b1 is positive and significant for 1970 to 1976, excluding 1975, and b2 is negative and significant over 1968 to 1970 and 1973. The values of b1 tend to be smaller than in equation two, and the positive sign could be associated with the non-significance of a1.

The elasticity of distance, c1, is negative but is significant only over 1970 to 1972 and 1974 to 1976. The trade reducing effect for MDC exports is greater than for MDC imports (see equation five below). This may be the result of poor market access and knowledge on the part of the MDC's, as well as the types of products the MDC's may be trying to export. This contrasts with the better transport and marketing facilities available to the industrial countries.

The dummy variable for intra-union trade is consistently significant and is particularly high, both prior to and after integration.

e Equation Five (Table 5.6)

Equation five is based on MDC import data so that a2 and b2 are specifically related to the MDC's. Overall, where significant, the elasticities have the correct signs.

EQUATION FOUR

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	d1	CONST	$\bar{R}^2$
1967	0.19	2.40*	1.26	-1.73	-0.53	7.00*	-6.80	0.34
	(0.16)	(2.76)	(0.86)	(-1.51)	(-1.15)	(3.10)	(-1.25)	
1968	0.34	2.90*	1.01	-2.33*	-0.59	6.60*	-4.20	0.42
	(0.34)	(3.68)	(0.84)	(-2.29)	(-1.42)	(3.21)	(-0.85)	
1969	-0.22	3.10*	1.59	-2.59*	-0.47	7.84*	-5.7	0.39
	(-0.20)	(3.70)	(1.22)	(-2.40)	(-1.09)	(3.58)	(-1.11)	
1970	-0.46	2.40*	1.80*	-1.58*	-0.89*	7.50*	-5.20	0.43
	(-0.53)	(3.27)	(1.78)	(-1.69)	(-2.34)	(3.87)	(-1.19)	
1971	-0.66	2.15*	2.05*	-1.25	-0.85*	7.90*	-6.54	0.41
	(-0.82)	(2.96)	(2.19)	(-1.38)	(-2.19)	(3.98)	(-1.52)	
1972	-0.78	1.36*	2.40*	-0.18	-0.92*	8.60*	-10.00*	0.43
	(-1.11)	(1.82)	(2.86)	(-0.19)	(-2.28)	(4.20)	(-2.27)	
1973	-0.005	0.22	1.20*	1.03*	-0.54	7.20*	-9.20*	0.31
	(-0.009)	(0.94)	(1.71)	(2.55)	(-1.41)	(3.73)	(-2.19)	
1974	-0.009	0.58	1.40*	0.73	-1.03*	6.90*	-7.36*	0.41
	(-0.02)	(0.79)	(2.09)	(0.86)	(-2.82)	(3.38)	(-1.88)	
1975	0.03	0.92	1.12	0.47	-0.90*	8.60*	-8.09*	0.36
	(0.05)	(1.27)	(1.67)	(0.55)	(-2.28)	(4.13)	(-1.94)	
1976	-0.06	0.30	1.48*	1.00	-1.04*	6.49*	-6.77	0.46
	(-0.16)	(0.56)	(2.82)	(1.56)	(-3.16)	(3.73)	(-1.92)	

Table 5.5

EQUATION FIVE

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	d1	CONST	$\bar{R}^2$
1968	1.07	1.43	-0.30	-1.03	-0.67	2.40	3.62	0.29
	(1.40)	(1.50)	(-0.30)	(-0.87)	(-1.65)	(1.19)	(0.76)	
1969	1.17	1.74*	-0.43	-1.34	-0.53	3.25*	2.89	0.29
	(1.57)	(1.84)	(-0.45)	(-1.16)	(-1.37)	(1.68)	(0.64)	
1970	0.70	1.19*	0.08	-0.62	-0.69*	2.22	2.68	0.43
	(1.33)	(1.88)	(0.11)	(-0.84)	(-2.48)	(1.59)	(0.86)	
1971	0.87*	1.35*	-0.35	-1.76*	-0.56*	1.49	10.78*	0.46
	(1.92)	(2.69)	(-0.62)	(-3.00)	(-2.32)	(1.20)	(3.98)	
1972	0.55	1.12*	0.21	-0.49	-0.56*	2.94*	1.24	0.47
	(1.27)	(2.73)	(0.39)	(-0.99)	(-2.37)	(2.46)	(0.48)	
1973	0.45	0.77*	0.29	-0.09	-0.61	2.50*	1.58	0.44
	(1.08)	(2.22)	(0.57)	(-0.21)	(-2.57)	(2.05)	(0.63)	
1974	0.36	0.57*	0.37	0.15	-0.73*	2.10*	2.46	0.45
	(0.83)	(1.72)	(0.74)	(0.38)	(-3.34)	(1.74)	(1.06)	
1975	0.06	0.29	0.82*	0.52	-0.68*	2.54*	0.56	0.47
	(0.14)	(0.94)	(1.75)	(1.38)	(-3.07)	(2.19)	(0.24)	
1976	0.30	0.51*	0.62	0.18	-0.65*	3.57*	0.06	0.43
	(0.78)	(1.75)	(1.34)	(0.49)	(-2.75)	(2.86)	(0.02)	

Table 5.6

Although a1 is positive it is insignificant apart from in 1971. A2 is positive and significant over 1969 to 1974 and in 1976. The value of a2 ranges between 0.51 and 1.74, with the general trend being one of decline over time. It is obvious that income is important in determining imports for the MDC's, although it is not as elastic as in equation four. In part this may be due to the smaller number of importing countries in the sample that in terms of income will be grouped together. (In equation four, a2 covers both MDC's and industrialised countries thereby providing a greater range).

For the elasticities of population, b1 is significant only in 1975 and b2 is significant only in 1971. In general we therefore have to assume based on the estimates so far that for MDC imports, population is not an important determinant of trade levels.

Distance is significant from 1970 onwards and has a smaller negative effect on MDC imports than on MDC exports. As stated above, this will reflect the greater range of goods, market knowledge and better transport systems available to industrial countries.

The dummy variable is significant in 1969 and in 1972 to 1976, but its value is lower than in equation four and indicates that there may be very little difference between the determinants of MDC intra and extra imports.

f Equation Six (Table 5.7)

So far we have examined the intra and extra distance elasticities by comparing different equations. To allow for consistency in all other variables we have re-estimated equation one with two distance variables, one for trade within the region (c1), and one for extra trade (c2).

Both income elasticities were positive, and although a2 was significant from 1967 to 1972, a1 was not significant. Of the population elasticities b1 was positive and significant between 1971 and 1976, and b2 was negative and significant between 1967 and 1970, generally following a similar pattern to equation one.

EQUATION SIX

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	c2	d1	CONST	$\bar{R}^2$
1967	1.09	2.08*	0.002	-1.63*	-1.33	-0.35	14.31	-2.36	0.37
	(1.56)	(2.99)	(0.002)	(-1.79)	(-1.50)	(-1.05)	(1.62)	(-0.59)	
1968	0.91	2.32*	0.20	-1.94*	-1.37	-0.42	13.60	-1.35	0.40
	(1.45)	(3.68)	(0.25)	(-2.35)	(-1.61)	(-1.34)	(1.61)	(-0.35)	
1969	0.78	2.54*	0.39	-2.24*	-1.16	-0.29	13.70	-2.36	0.37
	(1.18)	(3.83)	(0.45)	(-2.59)	(-1.33)	(-0.91)	(1.58)	(-0.60)	
1970	0.45	1.75*	0.81	-1.23*	-1.13	-0.64*	9.30	-2.12	0.42
	(0.84)	(3.25)	(1.17)	(-1.78)	(-1.53)	(-2.35)	(1.26)	(-0.66)	
1971	0.15	1.37	1.17*	-0.79	-1.10	-0.62*	9.30	-3.28	0.43
	(0.31)	(2.79)	(1.86)	(-1.26)	(-1.57)	(-2.34)	(1.31)	(-1.07)	
1972	-0.01	1.04*	1.45*	-0.34	-1.05	-0.59*	9.96	-5.61*	0.43
	(-0.02)	(2.19)	(2.38)	(-0.56)	(-1.43)	(-2.15)	(1.35)	(-1.79)	
1973	0.29	0.62	0.87*	0.11	-0.87	-0.56*	7.86	-3.8	0.38
	(0.73)	(1.53)	(1.68)	(0.22)	(-1.24)	(-2.10)	(1.12)	(-1.30)	
1974	0.25	0.45	0.95*	0.43	-0.97	-0.84*	5.6	-2.59	0.41
	(0.62)	(1.11)	(1.86)	(0.85)	(-1.47)	(-3.49)	(0.85)	(-0.96)	
1975	0.23	0.35	0.99*	0.54	-0.85	-0.69*	6.42	-3.97	0.39
	(0.56)	(0.87)	(1.96)	(1.08)	(-1.21)	(-2.68)	(0.91)	(-1.39)	
1976	0.09	0.37	1.18*	0.55	-1.10*	-0.76*	8.09	-3.98	0.46
	(0.39)	(1.18)	(2.89)	(1.34)	(-1.78)	(-3.36)	(1.30)	(-1.56)	

Table 5.7

Of interest though are the two distance variables. As expected the elasticity of intra distance, c1, ranging between -0.85 and -1.37, was larger than the elasticity of external distance, c2, which lay between -0.29 and -0.84. Also of interest is that whereas c1 becomes less restrictive over time, c2 becomes more restrictive. But although c2 is significant between 1970 and 1976, c1 is significant only in 1976.

The dummy variable also reacts in an unexpected way, increasing quite dramatically, now lying between 5.6 and 14.31, but is not significant and seems to fall in value over time as the two distances begin to converge.

g Equation Seven (Table 5-8)

The single year cross section equations are restricted in the amount of direct information that they can provide about the effects of economic integration. As we only have two choices of possible dummy variable - intra and extra trade in any one year - we are restricted to one dummy variable.[12.] Therefore to estimate the effects of integration on the option not chosen requires further calculations based on the estimated equation, and involves using the residual method.[13.]

In an attempt to overcome this problem we have used the technique of adjacent year regressions which basically involves the pooling of the data for two adjacent years.[14.] There are now a total of four possible choices of dummy variable - intra and extra trade in each of the two years - of which a maximum of three may be used one having to be excluded to represent normal trade. Equation seven is based on this method and incorporates dummy variables for intra trade in the first and second years and extra trade in the first year, all of these being relative to extra trade in the second year. This should therefore give

12. This is because one of the alternatives has to be used to represent normal trade.
13. That is measuring the difference between actual and hypothetical trade flows.
14. Basically this technique should keep the other estimated elasticities more stable.

EQUATION SEVEN

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	d1	d2	d3	CONST	$\bar{R}^2$
1967/68	1.05*	2.27*	0.03	-1.88*	-0.48*	4.72*	4.69*	-0.12	-0.62	0.40
	(2.29)	(4.97)	(0.05)	(3.15)	(-2.22)	(4.02)	(3.97)	(-0.25)	(-0.24)	
1968/69	0.92*	2.49*	0.19	-2.18*	-0.45*	5.12*	5.35*	0.36	-0.81	0.40
	(2.05)	(5.58)	(0.34)	(-3.73)	(-2.10)	(4.29)	(4.57)	(0.75)	(-0.32)	
1969/70	0.66	2.17*	0.55	-1.77*	-0.54*	5.12*	5.15*	0.09	-1.53	0.41
	(1.58)	(5.20)	(1.01)	(-3.28)	(-2.73)	(4.52)	(4.65)	(0.22)	(-0.60)	
1970/71	0.34	1.59*	0.94*	-1.04*	-0.68*	4.69*	4.77*	0.18	-2.16	0.45
	(0.97)	(4.50)	(2.07)	(-2.30)	(-3.80)	(4.66)	(4.80)	(0.44)	(-1.04)	
1971/72	0.10	1.23*	1.27*	-0.59	-0.66*	5.07*	5.49*	0.35	-3.99*	0.45
	(0.32)	(3.70)	(2.98)	(-1.40)	(-3.70)	(4.97)	(5.55)	(0.86)	(-1.96)	
1972/73	0.19	0.84*	1.10*	-0.13	-0.62*	5.26*	5.26*	-0.04	-4.23*	0.43
	(0.64)	(2.80)	(2.80)	(-0.33)	(-3.50)	(5.15)	(5.30)	(-0.10)	(-2.10)	
1973/74	0.32	0.56*	0.86*	0.25	-0.72*	4.39*	4.65*	-0.39	-2.84	0.43
	(1.10)	(2.01)	(2.43)	(0.69)	(-4.30)	(4.30)	(4.96)	(-0.97)	(-1.50)	
1974/75	0.25	0.41	0.96*	0.47	-0.78*	4.73*	4.81*	0.15	-3.17	0.43
	(0.89)	(1.49)	(2.76)	(1.36)	(-4.75)	(4.84)	(5.16)	(0.40)	(-1.73)	
1975/76	0.17	0.38	1.07*	0.52*	-0.75*	4.88*	4.93*	-0.03	-3.68*	0.45
	(0.69)	(1.56)	(3.46)	(1.67)	(-4.70)	(5.42)	(5.46)	(-0.07)	(-2.05)	

Table 5.8

directly comparable estimates of intra and extra trade in the first year. For extra trade this really only shows the relationship between extra trade from one year to the next, but with the change in sign we may get some indication of whether extra trade is improving or not.

Unfortunately the extra regional trade dummy variable was not significantly different from zero and may indicate that extra trade from one year to the next was similar - i.e. that there were no additional changes in extra trade from one year to the next. If for example there had been significant trade diversion we would expect this dummy variable to be positive - i.e. extra trade in year one is greater than in year two - but we do not have evidence for this. Overall, the performance of this equation was similar to equation one, although now more of the estimated elasticities are significant, and the variation in the extent to which the model explains trade flows is reduced, $\bar{R}^2$ lying between 0.40 and 0.45 compared to 0.37 and 0.46 in equation one.

h Equation Eight (Table 5.9)

Given the special links, colonial and Commonwealth, that exist between the UK and the West Indies, it was felt that trade with the UK may be biased upwards and that this should be taken into account in the equation by including a dummy variable for trade with the UK, similar in function to the intra-union trade dummy variable.

In this equation both a1 and a2 were positive with a1 significant over 1967 - 1970 and in 1973 and, with all of the a2 apart from 1972 being significant though they were declining over time. B1 was significant in only one year (1972) and b2 was negative and significant for 1967 to 1971. The elasticity of distance, c1, was negative as expected.

Of particular interest in this equation is the dummy variable for trade with the UK (d2). This lay in the range 3.02 to 4.13 and was significant in every year, indicating that trade with the UK is greater than the other variables allow. At the same time the overall fit of the

EQUATION EIGHT

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	d1	d2	CONST	$\bar{R}^2$
1967	1.22* (1.94)	2.22* (3.52)	-0.22 (-0.26)	-1.85* (-2.24)	-0.52* (-1.78)	5.08* (3.76)	3.82* (3.94)	0.06 (0.02)	0.48
1968	1.25* (2.28)	2.66* (5.51)	-0.25 (-0.34)	-2.39* (-4.05)	-0.59* (-3.03)	4.90* (4.08)	4.02* (4.24)	1.74* (1.80)	0.52
1969	1.17* (1.97)	2.92* (4.94)	-0.12 (-0.16)	-2.75* (-3.56)	-0.47* (-1.72)	5.89* (4.47)	4.13* (4.38)	0.77 (0.23)	0.51
1970	0.78* (1.68)	2.07* (4.46)	0.39 (0.66)	-1.64* (-2.76)	-0.79* (-3.51)	5.04* (4.64)	3.77* (4.87)	0.19 (0.07)	0.57
1971	0.44 (1.04)	1.65* (3.93)	0.81 (1.51)	-1.15* (-2.14)	-0.78* (-3.59)	4.97* (4.77)	3.68* (5.00)	-1.19 (-0.47	0.58
1972	-0.22 (-0.43)	0.78 (1.62)	1.15* (1.71)	-0.56 (-0.88)	-0.93 (-3.20)	0.04 (0.39)	3.58 (3.81)	5.74* (2.22)	0.45
1973	0.59* (1.68)	0.92* (2.59)	0.53 (1.17)	-0.23 (-0.52)	-0.72* (-3.31)	5.40* (5.16)	3.58* (4.84)	-2.20 (-0.91	0.54
1974	0.55 (1.49)	0.75* (2.03)	0.61 (1.32)	0.09 (0.19)	-0.94* (-4.55)	4.96* (4.75)	3.02* (4.16)	-1.75 (-0.76)	0.53

Table 5.9

regression improved, ($\bar{R}^2$ in the range 0.45 to 0.58).

Part of the problem in estimating this type of model for the West Indies is the diversity of the MDC economies, any one of which can bias the results. To make a comparison with later results, and to try and isolate the effects of economic integration on each of the MDC's, trade flow equations were estimated for each of the four members. The form of the equation was that of number eight - i.e. including a dummy variable for trade with the UK.

i Equation Nine - Barbados (Table 5-10)

Equation nine is an estimate of the trade flow model for Barbados' imports and exports, and includes a dummy variable to account for the special relationship between the UK and members of the Commonwealth. In general, the elasticities had the correct signs and this form of the equation accounted for between 37% and 57% of the variation in trade flows.

Although they have the correct sign, neither of the elasticities relating to the exporter, a1 and b1, were significant. The elasticity of importers income, a2, was significant for 1968 to 1973 and over this period the elasticity varied between 1.9 and 6. B2 is also significant over 1968 to 1971 and has a correspondingly high negative elasticity of population. Once again the emphasis seems to be on the importance of import elasticities in determining trade, the export elasticities being relatively unimportant or incapable of describing changes in trade flows. This is partly a reflection of the relatively low share of exports in GDP over the period - less than 40% in 1967 and 20% in 1977 - and the relatively high share of imports in GDP - 71% in 1967 and 54% in 1976. Furthermore as the elasticities a2 and b2 declined over time so did the share of imports in GDP.

The elasticity of distance, c1, was of the correct sign, and significant in 1968, 1970, and over the period 1973 to 1976. Its value lay between -0.79 and -1.33 and suggests a stronger negative influence on trade towards

EQUATION NINE
BARBADOS

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	d1	d2	CONST	$\bar{R}^2$
1967	1.11 (0.71)	2.15 (1.38)	-0.37 (-0.18)	-2.28 (-1.11)	-0.81 (-1.37)	2.90 (1.00)	5.32* (2.57)	7.96 (0.92)	0.42
1968	1.34 (1.02)	4.64* (3.54)	-0.75 (-0.43)	-5.46* (-3.14)	-0.91* (-1.80)	2.41 (0.96)	5.52* (3.04)	15.88* (2.07)	0.57
1969	2.06 (1.44)	6.04* (4.22)	-1.62 (-0.86)	-7.20* (-3.82)	-0.26 (-0.48)	5.85* (2.15)	5.81* (2.97)	13.83 (1.67)	0.57
1970	1.63 (1.21)	4.12* (3.08)	-0.81 (-0.46)	-4.41* (-2.52)	-0.93* (-1.81)	5.17* (1.99)	5.35* (2.86)	8.82 (1.12)	0.52
1971	1.79 (1.42)	4.04* (3.21)	-1.08 (-0.66)	-4.39* (-2.68)	-0.70 (-1.41)	6.03* (2.36)	5.36* (2.96)	7.69 (1.02)	0.53
1972	1.68 (1.32)	2.51 (1.96)	-0.96 (-0.58)	-2.61 (-1.57)	-0.80 (-1.53)	5.79* (2.18)	5.62* (2.98)	5.99 (0.77)	0.53
1973	1.43 (1.45)	1.90* (1.94)	-0.89 (-0.70)	-1.95 (-1.54)	-0.79* (-1.83)	4.22* (1.91)	5.07* (3.25)	7.37 (1.19)	0.51
1974	1.55 (1.29)	1.39 (1.16)	-0.66 (-0.45)	-0.93 (-0.63)	-1.33* (-2.85)	4.43* (1.76)	4.90* (2.77)	4.69 (0.73)	0.49
1975	0.65 (0.58)	0.22 (0.39)	0.57 (0.40)	0.72 (0.85)	-1.06* (-2.12)	4.70* (1.86)	4.12* (2.29)	-2.17 (-0.32)	0.37
1976	0.87) (1.07)	0.97 (1.20)	0.41 (0.39)	-0.17 (-0.17)	-1.08* (-2.83)	5.94* (2.93)	2.72* (1.90)	-2.41 (-0.46)	0.56

Table 5.10

the end of the period. This may be associated with a change in the pattern of goods imported and exported with more manufactured goods as well as the possible effects of increased tariff barriers reducing the value of trade.

The dummy variable for trade with the UK was significant over the whole period, generally greater than 5 confirming the strong post colonial ties within the Commonwealth, as well as reflecting the decline in sugar prices.

The dummy variable for intra-regional trade (d1) was not significant until 1969 when it doubled in value from 2.41 (1968) to 5.85 (1969). This higher value, indicating evidence for gross trade creation, was maintained through to 1976. Strictly the dummy variable should be close to zero prior to integration and positive thereafter and although the estimated pattern indicates an integration effect, the values in 1967 and 1968 suggest that other factors are present prior to integration. After 1974 the increasing value of the dummy variable may be partly attributable to oil imports, especially from Trinidad-Tobago. It may also be that the dummy variable will change as the price of sugar changes as changes in extra-trade will also reflect changes in sugar prices that are not determined by GDP or population, whereas intra trade may be more stable, therefore as the value of extra-trade falls with sugar prices intra-trade appears to improve.

j Equation Ten - Guyana (Table 5-11)

Of the four trade flow equations for the individual MDC's, that of Guyana provides the best overall fit with an $\bar{R}^2$ lying between 0.53 and 0.72. Apart from the distance variable all of the elasticities have the correct sign.

Both a1 and a2 are positive and significant over the whole period, this being the first time that both a1 and a2 have been consistently significant.

For the population variables both b1 and b2 have the correct sign and are significant for the period 1967 to 1970 and in 1971 (b1) and between 1967 and 1971 (b2), although the large negative elasticities in the late 1960's

EQUATION TEN
GUYANA

ESTIMATED ELASTICITES

YEAR	a1	a2	b1	b2	c1	d1	d2	CONST	$\bar{R}^2$
1967	3.65*	3.84*	-3.50*	-3.76*	0.92	9.32*	3.53*	-0.50	0.53
	(2.90)	(3.05)	(-2.08)	(-2.24)	(1.66)	(3.88)	(2.04)	(-0.07)	
1968	4.09*	4.15*	-4.07*	-4.11*	0.95*	10.16*	4.47*	0.69	0.69
	(4.00)	(4.06)	(-2.96)	(-2.99)	(2.07)	(5.05)	(3.06)	(0.11)	
1969	3.87*	3.71*	-3.77*	-3.46*	0.78	10.03*	4.51*	-0.91	0.62
	(3.40)	(3.26)	(-2.49)	(-2.29)	(1.58)	(4.56)	(2.83)	(-0.14)	
1970	2.89*	3.08*	-2.48*	-2.75	0.08	7.54*	3.97*	1.15	0.72
	(4.06)	(4.32)	(-2.65)	(-2.94)	(0.25)	(5.39)	(3.91)	(0.27)	
1971	1.81*	2.10*	-1.21	-1.64*	-0.39	5.33*	3.55*	2.21	0.64
	(2.82)	(3.27)	(-1.45)	(-1.97)	(-1.32)	(4.09)	(3.82)	(0.57)	
1972	2.10*	2.08*	-1.45	-1.38	-0.17	7.69*	3.95*	-2.64	0.71
	(3.22)	(3.19)	(-1.74)	(-1.67)	(-0.59)	(5.94)	(4.26)	(-0.69)	
1973	2.30*	1.67*	-1.58	-0.64	-0.32	8.56*	4.12*	-5.17	0.63
	(4.90)	(2.11)	(-1.62)	(-0.66)	(-0.88)	(5.29)	(3.56)	(-1.13)	
1974	2.27*	1.90*	-1.56*	-0.96	-0.41*	7.59*	3.87*	-4.06	0.75
	(3.74)	(3.13)	(-2.17)	(-1.34)	(-1.79)	(6.51)	(4.87)	(-1.49)	
1975	1.67*	1.42*	-0.71	-0.40	-0.34	7.73*	3.75*	-7.25*	0.65
	(2.38)	(2.02)	(-0.85)	(-0.48)	(-1.11)	(5.39)	(3.73)	(-2.02)	
1976	1.35*	1.02	-0.50	0.01	-0.50	6.61*	3.76*	-4.64	0.62
	(2.15)	(1.63)	(-0.66)	(0.01)	(-1.69)	(4.85)	(3.81)	(-1.34)	

Table 5.11

(values over -3) does increase towards zero by 1975/76.

The elasticity of distance, c1, is significant in only two years, 1968, when it also had the wrong sign (0.95) and 1974 when it was negative. In fact distance is not negative until 1971. This result is similar in pattern to those for Barbados.

The dummy variable for trade with the UK is not as large as that for Barbados, although it is consistently significant lying between 3.5 and 4.5.

The dummy variable for intra-union trade, although it is significant does not seem to indicate the expected pattern for economic integration, in the late 1960's having very high values of close to and over 10, and during the 1970's it falls in value and tends to lie between 7 and 8. However this does indicate a strong emphasis on intra-regional trade in comparison to the other MDC's and this is supported by the generally higher shares of Guyana's regional trade in total trade.[15]

k Equation Eleven - Jamaica (Table 5-12)

On average this equation accounts for over 50% of the variation in trade flows with an $\bar{R}^2$ lying between 0.43 and 0.60. All of the elacticities generally have the correct sign, but once again a1 is not significant, and a2 significant for only three years - 1968 to 1970. From 1969 a2 declines and is negative in 1974 to 1976 although it is not significantly different from zero.

Although b1 and b2 have the correct sign (negative) neither of them are significant.

The elasticity of distance, c1, is negative and significant from 1970, and is always less than -1.3 indicating quite a strong resistance to trade, although this may be associated with factors other than resistance to trade including the concentration of sugar and bauxite exports in total exports that in general are to non-regional markets.

The dummy variable for trade with the UK (d2) is significant and lies between 3 and 4 in general. This

15. See table 6.5

EQUATION ELEVEN
JAMAICA

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	d1	d2	CONST	R^{-2}
1967	1.66	2.05	-0.59	-1.58	-0.58	4.86	3.71*	-1.08	0.47
	(1.24)	(1.54)	(-0.33)	(-0.88)	(-0.82)	(1.72)	(2.01)	(-0.13)	
1968	1.09	2.38*	0.24	-2.04	-0.71	4.39*	3.60*	-0.89	0.60
	(0.97)	(2.11)	(0.16)	(-1.34)	(-1.17)	(1.78)	(2.21)	(-0.12)	
1969	1.48	2.57*	-0.36	-2.33	-0.95	4.66*	3.98*	3.40	0.57
	(1.35)	(2.33)	(-0.25)	(-1.58)	(-1.64)	(1.95)	(2.55)	(0.47)	
1970	1.56	1.92*	-0.47	-1.43	-1.31*	4.77*	3.77*	4.23	0.59
	(1.62)	(1.99)	(-0.36)	(-1.12)	(-2.53)	(2.23)	(2.69)	(0.66)	
1971	1.28	1.33	-0.19	-0.73	-1.44*	4.10*	3.79*	4.35	0.59
	(1.42)	(1.48)	(-0.16)	(-0.61)	(-2.87)	(1.96)	(2.83)	(0.71)	
1972	1.18	0.87	-0.02	-0.04	-1.50*	5.25*	3.85	2.13	0.54
	(1.28)	(0.94)	(-0.01)	(-0.04)	(-2.88)	(2.41)	(2.78)	(0.34)	
1973	1.17	0.18	-0.04	0.88	-1.53*	5.30*	3.77*	0.70	0.50
	(1.26)	(0.19)	(-0.03)	(0.72)	(-2.64)	(2.20)	(4.47)	(0.10)	
1974	1.16	-0.003	-0.16	1.04	-1.44*	4.51	3.08*	1.75	0.47
	(1.23)	(-0.003)	(-0.14)	(0.88)	(-2.78)	(1.92)	(2.14)	(0.29)	
1975	0.82	-0.05	0.40	1.12	-1.41*	5.46*	3.62*	-0.69	0.43
	(0.83)	(-0.05)	(0.32)	(0.89)	(-2.36)	(2.13)	(2.25)	(-0.10)	
1976	0.54	-0.08	0.58	1.10	-1.80*	3.85*	2.98*	4.11	0.50
	(0.73)	(-0.11)	(0.60)	(1.14)	(-3.60)	(1.79)	(2.18)	(0.72)	

Table 5.12

variable follows a pattern similar to Guyana and may be partly explained by the possible similarity of exports to the UK - bauxite and sugar - although given the relative size of the elasticities, Jamaica would seem to depend less on the UK market.

The dummy variable for intra-regional trade is significant from 1968, and in general the values are greater than those of 1967. Although this pattern may reflect the effects of integration it may also, as for distance, reflect the changing price of sugar and bauxite.

1 Equation Twelve - Trinidad-Tobago (Table 5-13)

Of the four MDC's, Trinidad-Tobago has the poorest results in terms of the $\bar{R}^2$ which lies between 0.23 and 0.47. Although both a1 and a2 have the correct positive signs neither of them are significant. Until 1971 a1 is less than 1 thereafter increasing though still less than 2. The income elasticity of the importer - a2 - although not significant has a higher value, though once again less than 2.

Neither b1 nor b2 are significant, b2 has the correct negative sign whereas b1 is positive up to 1972.

Although a1, a2, b1 and b2 are all non-significant, a2 and b2 tend to begreater than a1 and b1, suggesting the relative importance of the import side.

Distance is significant from 1968, with negative values close to 1. The dummy variable for trade with the UK, although generally significant and greater than 3, had a value in 1974 of only 1.98. In comparison to the other MDC's, Trinidad-Tobago's links with the UK are not as strong, reflecting Trinidad's more developed economy and trade links with the rest of the world.

The dummy variable for regional trade is not significant until 1970/71 by which time it has risen to 5.26 from 1.75 in 1967, and provides the strongest indication so far of evidence of integration effects. Trinidad-Tobago is the most developed of the region's members and as well as concentrating on the oil industry, which is important for

EQUATION TWELVE
TRINIDAD-TOBAGO

ESTIMATED ELASTICITIES

YEAR	a1	a2	b1	b2	c1	d1	d2	CONST	$\bar{R}^2$
1967	0.71	1.69	0.03	-1.36	-0.87	1.75	3.05	5.96	0.23
	(0.44)	(1.18)	(0.12)	(-0.71)	(-1.67)	(0.60)	(1.21)	(0.67)	
1968	0.62	1.54	0.27	-1.04	-1.05*	2.21	3.31	4.58	0.26
	(0.19)	(0.90)	(0.43)	(-0.36)	(-1.97)	(0.66)	(1.35)	(0.37)	
1969	0.54	1.69	0.54	-1.19	-1.14*	3.23	3.41*	3.38	0.31
	(0.10)	(0.97)	(0.64)	(-0.40)	(-2.17)	(1.03)	(1.98)	(0.19)	
1970	0.52	1.45	0.66	-0.82	-1.08*	3.97	3.19*	1.00	0.39
	(0.09)	(0.89)	(0.78)	(-0.23)	(-2.23)	(1.45)	(1.83)	(0.12)	
1971	0.58	1.36	0.72	-0.64	-0.94*	5.26*	3.25*	-2.22	0.45
	(0.18)	(0.88)	(0.84)	(-0.14)	(-1.89)	(1.98)	(2.14)	(-0.63)	
1972	1.17	1.28	0.10	-0.38	-1.07*	6.61*	3.33*	-3.21	0.47
	(0.66)	(0.76)	(0.44)	(-0.08)	(-2.06)	(2.47)	(2.31)	(-0.79)	
1973	1.17	1.10	-0.18	-0.34	-0.86*	5.56*	2.81	-1.14	0.28
	(0.67)	(0.59)	(-0.15)	(-0.25)	(-1.80)	(1.92)	(1.58)	(-0.39)	
1974	1.53	0.84	-0.57	0.21	-0.88*	6.00*	1.98	-3.31	0.30
	(1.07)	(0.35)	(-0.51)	(0.19)	(-2.11)	(2.11)	(1.06)	(-0.70)	
1975	1.80	1.46	-0.63	-0.42	-1.09*	7.55*	3.26*	-5.23	0.31
	(0.99)	(0.69)	(-0.58)	(-0.39)	(-1.83)	(2.43)	(2.56)	(-0.83)	
1976	1.34	1.11	-0.21	-0.06	-0.90*	6.87*	2.88*	-5.19	0.34
	(0.83)	(0.57)	(-0.15)	(-0.06)	(-1.78)	(2.32)	(2.01)	(-0.94)	

Table 5.13

regional trade, it is the member most able to benefit from the regional grouping. However, many of the apparent integration effects are likely to be related to the oil price increases in the early 1970's.

Section 5.3: Overview of Trade Flow Equation Elasticities

This section discusses the elasticities estimated in the trade flow equations as a whole in an attempt to present an overall picture of the working of the model, what the model appears to be describing and to suggest explanations for some of the 'unexpected' results.

Section 5.3.1: Income and Population Elasticities

Income and population are included in the trade flow model as joint determinants of the size of the foreign sector and strictly the estimated elasticities a1 and b1, a2 and b2, should be discussed together.

If equations two, eight and ten are excluded, the elasticity a1 (exporters income) did not perform particularly well. Although the sign was generally correct (positive), a1 was only significant five times, twice in equation 2 and equation 7, and once in equation 5. This is in contrast to a2 (importer's income) which was generally positive and significant.

The population elasticities should have been negative, and apart from equation two this is true for b2 (importers population). However, b1 (exporters population) tends to be positive rather than negative and only in equation ten is it both negative and significant; in three equations the results are generally non-significant.

In most of the equations where b1 is significant but predominantly positive, a1, the corresponding income elasticity is non-significant (except in equation 10) and in all the other equations there are only two years in which both a1 and b1 are significant; this is equation two where they both had the wrong sign.

These results are open to several possible interrelated interpretations.

(i) The non-significance of al contributes to a breakdown in the relationship between the size of the foreign sector and trade flows so that trade as a function of population (which is positive) is in fact being estimated.

(ii) Population may be acting as a proxy for income.

(iii) The interaction between the foreign sector (estimated by income and population) and trade flows is different from that normally expected. This may affect the all-trade equations in such a way as to cancel out the income elasticities. Under this assumption the true relationship would be obvious in the intra and extra regional equations. (i.e. the explanation may lie in the special conditions of regional trade).

Possibilities one and two would tend to reinforce the view of the relative unimportance of the export side in determining trade flows. The third alternative basically suggests, for reasons discussed below, that the determinants of exports for the MDC's is different in some way from the expected result, although this does not exclude the possibility of one and two also occurring. Some of the trade flow results above do support the view that trade among the four MDC's is affected by income and population to a different degree and possibly in different ways.

First, in equation four (exports of the MDC's) those elasticities that are exclusively concerned with the MDC's (a1 and b1) do not conform to expectations; a1 is non-significant and negative and b1 is positive and significant. In equation five (imports of MDC's) where a1 and b1 are associated with both the MDC's and non-regional trading partners, although a1 and b1 are generally non-significant, a1 is positive and b1 although not always negative is not significant. In both of these equations a2 and b2 (elasticities associated with the importing countries) conform to expectations at least in terms of the signs.

So far this suggests that at least for trade involving non-MDC's the import related elasticities are as expected, although not always significant, whereas the export side does not seem to respond in the same way.

We now consider equations two and three. In equation three (extra trade) the import side acts as expected whereas on the export side a1 is non-significant and b1 is positive when significant. In every equation so far there is the possibility that b1 is positive because a1 is not significant.

In equation two (intra trade) not only do a1 and b1 have the wrong signs but a2 and b2 also have the wrong signs. In the first two years all of these elasticities are significant and have the wrong sign. We can at least assume then for these two years that either trade is determined in a different way or special factors have created these unusual results. Alternatively, we can assume that for intra trade, income is relatively unimportant and that population works in a different way.

If we ignore equation two, then in general the import elasticities, a2 and b2, behave as expected, a2 being positive and b2 being negative. Therefore the import side of the foreign sector diminishes as population increases. For MDC imports in general and in particular those imports from the rest of the world the signs tend to be correct although income tends to be significant in more cases, (in equation five b2 is significant only once). To the extent that income and population describe trade the import determinants of the foreign sector have a stronger relationship.

It is possible because of peculiarities of the MDC sample that the export elasticities can have the wrong sign especially for intra trade and be insignificant for extra and total trade.

Two of the MDC's may be the cause of the unexpected results; Trinidad-Tobago and Barbados, in particular the latter. Concentrating on the MDC's alone, if the hypothesis behind the trade flow model is correct (i.e. the relative size of the foreign sector) then within the West Indies as population increases the share of exports in total income should decline - and this is true for the import side - and it is also assumed that trade is balanced which loosely interpreted would mean that merchandise imports

and exports as a share of income were roughly equal - though not necessarily identical. As long as they are reasonably close then the model functions as predicted, because it is mainly designed to look at merchandise trade. At the same time small deficits will be balanced on the invisibles account and in the case of the West Indies we would expect net tourist receipts to play this balancing role. We are therefore assuming that there are no large and persistent deficits on the merchandise trade account. For Trinidad-Tobago, Guyana and Jamaica, imports and exports are roughly balanced in this sense to within a certain percentage. Barbados on the other hand has tended to run a persistent and large visible trade deficit (as much as 50% between the share of imports and exports in income). This has been financed by tourist receipts, foreign investment, aid, loans etc., but this gap may be large enough to violate the assumption of equilibrium to such an extent as to visibly effect the results. Effectively it gives Barbados the appearance of having an uncharacteristically small export foreign sector with respect to population, and this could certainly bias the elasticities for intra regional trade and result in a positive relationship between the foreign sector on the export side (exports share of GDP) and population. This may account in part for the results in equation two and in general for the insignificant and/or incorrect signs of the export elasticities.

The results on the export side are not rejected and we have to consider the violation of the equilibrium assumption as a possible alternative explanation. Furthermore this upward bias in the export side of the foreign sector will also bias the dummy variable estimates upwards to an extent. By using individual MDC equations (equations 9 - 12) we can reduce this effect to a considerable extent and as we can see from the results of equations 9 - 12 the dummy variable does reflect a more acceptable integration effect.

In general it would appear that if in the sample used there are countries that do not conform to the equilibrium assumption then either we have to re-estimate the equations country by country, or else we have to incorporate equilibrating variables (based on the capital account) to account for the visible trade deficit.

Section 5.3.2: Resistance to Trade

The role of c1, the elasticity of distance, is much broader than the geographic distance it is measured by. Basically it is included as a proxy for those factors that may act to restrict trade between a pair of countries as has been discussed in chapter four. But changes in this elasticity over time may be the result of other factors not directly associated with 'resistance'. For example, if the trade resistance effect appears to fall over time, as has been evident in some of the trade flow equations above, this may be caused by the following factors.

(i) Lower transport and insurance costs (perhaps a result of)
(ii) More extensive transport systems and regional infrastructure.
(iii) Improved contacts and communications between trading partners enhancing trade flows which effectively reduce the negative effect of distance.
(iv) Reduced tariffs generally.
(v) Tariff reduction within the customs union.
(vi) Other integration associated effects that have enhanced regional trade.
(vii) A broader range of regionally produced goods available, that result in a broader scope for trading opportunities.
(viii) Lower transport costs associated with more value-added especially of primary goods.
(ix) Greater access to industrial markets for third world exports.

Of course a stronger resistance effect can be associated with all these factors working in the opposite direction. It is therefore possible that at least some of the integration effects may be captured by changes in the elasticity of distance, although to quantify this effect would require for example an estimate of what extent

factor 2 affected c1, and to what extent factor 2 was caused by integration. Although this type of calculation is outside the scope of this thesis we should note that all of the above factors could be directly and indirectly affected by integration. Greater emphasis should be placed on c1 as an indicator of possible integration effects and this proxy should be researched in more detail and the measurement refined.

In most of the equations the elasticity, c1, was negative and significant as expected. What is important is the direction in which c1 moves over time, and the relative magnitude of the elasticity between comparable equations.

The following points may be noted. First, the effect of distance tended to increase in all the equations that included trade external to the region. Second, for intra-union trade the effect tended to decrease and third, the effect of distance was greater for intra-regional trade than for extra regional.

The estimates of c1 in equations 2, 3 and 6, suggest that trade reducing effects are greater for trade between the MDC's. This reflects both their initially underdeveloped regional infrastructure and transport systems as well as a lack of regionally tradable goods, especially of manufactures. Efforts have been made to improve the regional infrastructure which will certainly have helped in reducing costs and making regional transport more predictable.[16.] So the general decline in the effect of c1 may be attributable to various factors that are likely to be associated with regional integration.

Second, as is evident from a comparison of equations two and three, trade between the region and the rest of the world - extra trade - is less restricted by the resistance proxy. This can be accounted for by various factors including better transport connections that are owned by the industrial countries, traditional links that imply a better market knowledge by the industrialised countries, the

16. For example the establishment of WISCO to improve the regional shipping service.

role of multinational corporations in the MDC's, and that many of the goods that are traded between the MDC's and the industrial countries are generally not available in the importing country. The tendency for cl to have an increasing effect over time on extra trade may be in part due to increased tariffs imposed by the industrial countries, the common external tariff of Carita/Caricom, competition from other third world countries etc. and is an indication of a possibly import substituting regional grouping.

There is also a slightly stronger distance effect for MDC exports when compared with MDC imports which may be associated with the greater dominance of industrial country exports and the need of the MDC's for these imports as well as a broader range of goods available for MDC imports as opposed to MDC exports.

Section 5.3.3: Integration Effects - Dummy Variable for Intra-Union Trade

In the trade flow model the dummy variable for intra-union trade is expected to indicate the effects of economic integration as reflected through changing trade flow patterns. Effectively it measures the extent to which the regression for extra-trade underestimates intra-regional trade flows. It is therefore assumed that the elasticities of income and population to trade are similar for both intra and extra trade - or at least have the same overall effect - and will be unaffected by integration.

The dummy variable elasticity is expected to be non-significant prior to economic integration and positive and significant thereafter. First, excluding the individual MDC equations (numbers 9 - 12), the dummy variable was positive and significant both before and after integration except in equation 6. This suggests the following possibilities.

(i) Effects similar to those of economic integration were evident prior to integration and are perhaps associated with the region's history of cooperation as well as its position within the Commonwealth.

(ii) That other factors are the source and integration has had no effect.
(iii) That other factors have declined in importance as integration effects became evident, the two creating a balance.
(iv) That there were other peculiarities in the sample that have affected the dummy variable.

It is possible that there is an underlying integration effect that was zero prior to and positive after economic integration, and any integration effects may have to be observed or make themselves evident by changes in the dummy variable rather than by its absolute value. It is certainly not the aim of this thesis to isolate all of the possible effects described above, but it is possible to suggest certain factors within the sample that could have contributed to this effect.

As suggested above, in general the import side of the trade flow model appears to approximate the expected results, and that many of the problems in the model are associated with the export side, particularly of the MDC's, specifically as a result of Barbados' large and persistent visible trade deficit. It is possible that this once again may be showing its effects.

If the dummy variable provides an estimate of the difference between intra and extra trade, then a bias in intra trade may be reflected in the size of the dummy variable. It has been suggested above that the relationship between the size of the export side of the foreign sector and population is positive instead of negative because of the unusually low share of exports in income (and the associated trade deficit) for Barbados. If this is the case then the difference between the (negatively related) foreign sector (export side) for extra trade and the positively related foreign sector (export side) for intra trade will be much greater than if the foreign sector for intra trade had a negative relationship with population as expected. This means that the dummy variable is appearing positive and large because of Barbados' trade deficit. If we could assume that this deficit affected the model in a

'constant' fashion then it could be possible to use the change in dummy variable as a measure of integration effects.

This is supported by equation 4 (MDC exports) in which the dummy variable is particularly large especially when compared to equation 5 (MDC imports) which is assumed to perform normally. The difference between intra exports and extra exports is very much greater than the difference between intra imports and extra imports and is associated with the bias in the intra exports caused by Barbados.

Given the restrictions we have to place on the interpretation of the dummy variable in the general equations, we will have to place greater emphasis on the individual MDC trade flow equations (Numbers 9 - 12). At least it may be possible to isolate special characteristics of the individual MDC's that could distort the results, and so come to a more acceptable estimate of integration effects. The results of these equations have already been discussed above and we are interested here principally in the characteristics of the dummy variables alone.

For the four MDC's, the value of the dummy variable is variable, both in the size of the elasticity and the individual patterns of change. The overall dummy variable elasticities in the previous equations would therefore not be suitable in estimating the effects of integration in individual members.

On the other hand, if we exclude Guyana which will be discussed below, the MDC's show a similarity over time. In 1967, 1968 and in some cases 1969, the dummy variable although positive is not significant, and generally prior to integration has much lower values than in any other equations. For Barbados and Trinidad-Tobago when the dummy variable does become significant there is a large increase in value. As a rough guide to the size of the changes the table below shows for the three MDC's in column A the percentage change in the dummy variable from the last insignificant value to the first significant value, and in column B the percentage change from the last insignificant value of the dummy variable to the highest subsequent value.

TABLE 5.14

	A	B
Barbados	142.7%	150.2%
Jamaica	- 9.7%	12.35%
Trinidad	32.5%	90.2%

As can be seen, the size of changes in the value of the dummy variable for Jamaica are much smaller (in fact initially negative), the dummy variable changing gradually and starting from a larger non-significant value.

It may be suggested that Trinidad-Tobago and Barbados experienced a more obvious 'integration effect' than did Jamaica. In the standard literature this change would be categorised as gross trade creation and is associated with greater regional trade. It also seems that taken on its own, Barbados does not seem to exhibit any of the features expected from the large trade deficit. If Barbados had been the cause of previous upward biases we would have expected this to be reflected in a larger dummy variable in equation 9. This does not rule out the effect of Barbados on the earlier equations and suggests that on its own the foreign sector on the export side performs satisfactorily. For Barbados the effects of the dummy variable seem to peak around 1971, thereafter declining. Jamaica's dummy variable on the other hand was more erratic and peaked in 1975. The dummy variable for Trinidad-Tobago grew up to 1972, declined in the following year and peaked in 1975. The stronger effects on Trinidad-Tobago reflects the more developed nature of the economy that could take advantage of trade liberalisation, though in later years the high dummy variable is probably associated with the growing oil trade (although this may also have been indirectly facilitated by economic integration). Trinidad-Tobago dominates regional trade by virtue of its role as a major regional petroleum supplier.

The results for Guyana are particularly interesting as practically all of the income elasticities, a1 and a2 are positive and significant and the population elasticities, b1 and b2 are negative and significant for 1967 to 1970. In both cases the elasticities declined in effect over time (i.e. both moved closer to zero from different directions). On the other hand distance is only significant in 1968 when it has the value of 0.95. C1 is positive until 1971.

The dummy variable is always significant and has very high values, peaking in 1968 and generally declining thereafter. This may be related to the fact that before integration the region was particularly important as a market and supplier for Guyana. As its economy is largely based on foodstuffs and bauxite it could not benefit much from trade liberalisation as it did not produce a broad enough range of goods. Furthermore as bauxite and alumina became more important, emphasis on trade would have shifted outside the region.

Section 5.4: Import Elasticity and Expenditure Share Models [17.]

In this section we present the results of the changes in income elasticity to import and the expenditure share methods. Before discussing the results in detail it is necessary to outline some of the restrictions imposed on the interpretation of the results by the methods used. These qualifications will reduce the confidence we can have in the results but reinforces the view that a proper discussion of the effects of integration requires more information, and should be incorporated as part of a much broader approach within which different methods contribute different parts to the overall picture, but in themselves cannot provide the full picture.

In deriving the elasticities for 1960/68, 1968/73 and 1968/74, the growth rates of imports and GDP on which the estimates are based will depend crucially on the time

17. Described in chapter four and section 5.1.

period chosen, specifically on the end years. By basing the growth rate of a period on the two end years we are assuming that the estimate derived accurately describes the overall performance during the chosen period. It is possible that one of the years chosen may be particularly good or bad and will tend to bias the estimated average growth rate. It may be that more representative estimates could be derived from the regression analysis of trade flows.

As expected the year-on-year growth rates that were also calculated show a marked degree of instability. Cyclical variation in the estimated elasticities may reflect the inability of many categories of imports to change in the short term and may therefore reflect changes in prices. In the short run for categories of imports that are essential or required for development volume may not be responsive to price and income changes, such that changes in the value of imports may be a reflection of an inelastic short run price demand function and not related to GDP growth as such. Also, if there are expectations that a price movement is not permanent, then consumption may continue at the same level and not respond in the short run to price signals. This may be observed around 1973/74 when oil prices increased substantially. It is therefore open to question whether we are in fact estimating the income elasticity of imports using the year-on-year growth rates. It is to be hoped that the longer run estimates are closer to the elasticity we want to measure, and we will concentrate on these measures. However the results still have to be interpreted with care.

The results of the expenditure share and import elasticity methods are now reported for the four MDC's. It must be remembered that both of these methods only give a partial result. An overview of the results of the expenditure share approach and the changes in income elasticity to import are found in tables 5.19 and 5.20.

Section 5.4.1: Barbados

The direction of change of elasticities for total, intra and extra imports between pre and post integration periods is reported in table 5.15, for all commodities as well as by one digit SITC headings.

The aggregate results for Barbados indicate evidence of gross trade creation (an increase in the elasticity of intra-regional imports), trade diversion (a fall in the elasticity of extra- regional imports) and no evidence of net trade creation (a fall in the elasticity of total imports), the last result possibly indicating a decline in total trade in response to changes in income, i.e. trade suppression. According to my own categories[18] the results can be interpreted as trade suppression, and trade diversion from extra to intra regional sources. The results of the expenditure share approach (change in domestic share = +1.7, change in partner share = +0.8, and change in world share = -2.5) indicate similar results (i.e. no net trade creation, gross trade creation and trade diversion) although the changes in elasticity indicate the replacement of extra imports by intra imports, the expendiure share approach also suggests a large trade suppression element or that trade is being diverted from extra imports to domestic production. Between the two periods the domestic share of expenditure increased from 53.5% to 55.2% accounting for 68% of the fall in extra imports (world share) share of total expenditure. This result is supported by the negative change in elasticity of total imports. Overall the net position seems to be at the expense of extra imports, with a greater domestic share of consumption.

The results for the individual SITC headings are reclassified below by direction of change.

At this level of disaggregation there is general evidence of trade suppression as evidenced by the negative changes in total elasticity for all groups apart from beverages and tobacco, crude raw materials, and manufactures. This trade suppression may be associated with greater

18. See section 4.6

CHANGES IN THE INCOME ELASTICITY TO IMPORT
(1960/68 and 1968/73)

BARBADOS

SITC Category	TOTAL	INTRA	EXTRA
A			
0 - Food	-0.02	0.19	-0.06
3 - Fuels	-2.05	1.20	-4.31
5 - Chemicals	-0.18	0.23	-0.28
8 - Misc. Manufactures	-0.49	0.73	-0.65
B			
1 - Beverages and Tobacco	0.26	2.21	-0.07
2 - Crude Raw Materials	0.04	0.69	-0.42
C			
4 - Animal/Vegetable Oil and Fat	-0.94	-0.22	-1.42
7 - Machinery and Transport Equipment	-0.60	-8.19	-0.56
9 - Others	-0.50	-2.52	-0.45
D			
6 - Manufactures	-0.07	-0.96	0.14

Table 5.15

domestic production, declining demand in general and declining demand for a particular category.

Category C shows the strongest evidence of trade suppression with both intra and extra import elasticities declining. This is not surprising for SITC-4 (animal/ vegetable oil fats) given the region's commitment to greater production of agricultural products. However the general decline in imports of SITC-7 (machinery and transport equipment) is perhaps associated less with greater domestic production and more with the high rates of growth of this category of imports prior to integration.

Overall category A also suggests import suppression, although it is most evident for fuel imports - SITC-3. Category A suggests trade suppression though largely at the cost of extra imports, some of this trade being diverted to regional producers and the rest either to domesic producers or to different product groups. In particular there appears to be clear evidence of trade diversion of fuels from extra-regional suppliers to regional suppliers (as well as to domestic sources). This is associated with the increasing role of Trinidad-Tobago as a major regional supplier of petroleum and petroleum products.

In category B, beverages and tobacco -SITC-1 - indicate both trade creation within the region as well as a small degree of trade diversion from extra to intra sources, whereas crude raw materials - SITC-2 - shows a stronger element of trade diversion from extra to intra and very . little trade creation (i.e. small change in total import elasticity). Changes in SITC-1 would indicate greater regional self-sufficiency in producing and processing this category.

Finally, category D which consists of manufactures suggests a fall in regional sources being replaced by extra-regional sources although there is little evidence of a greater share of total imports. However, Barbados has increased its share in manufactured goods production and other evidence (i.e. share of regional imports in total imports) suggests more manufactured goods from the region.

Although the expenditure share approach suggests a stronger movement from extra sources to domestic sources than to regional sources we do not know precisely in which categories these changes were the strongest. It may be expected that the types of goods that Barbados can produce for themselves (or at least assemble) will be those already produced by other more developed MDC's, so any switch to domestic production may be indicated by falls in the elasticity of intra imports than by extra imports which would suggest manufactures and machinery and transport equipment.

Section 5.4.2: Guyana

The aggregate changes in total, intra and extra import elasticities for Guyana were all positive, the largest change occurring in intra imports. This indicates trade creation both regionally and extra regionally. The expenditure share aproach also indicates net trade creation (negative change in domestic share) as well as a strong gross trade creation effect; however, there is also an indication of trade diversion away from extra-regional sources. Rather than general trade creation the expenditure share results indicate that over 88% of the increase in intra trade had been diverted from extra sources.

In general the domestic share of expenditure was relatively stable, while partner share increased from 6% to 8.32% and non-partner share fell from 43.1% to 41%. Both methods suggest an increase in partner share of imports, though it is not agreed whether this was trade creation or trade diversion.

Only two product groups, (see table 5-16) crude raw materials - SITC-2 - and others - SITC-9- show a fall in the elasticity of total imports, and both cases are accompanied by falls in both intra and extra import elacticities. As in the case of Barbados this could be attributed to falling demand or greater domestic production. In both cases intra trade appears to be hit harder. These two cases seem to be the exception and both of these import categories generally

CHANGES IN THE INCOME ELASTICITY TO IMPORT
(1960/68 and 1968/73)

GUYANA

SITC Category	TOTAL	INTRA	EXTRA
A			
0 - Food	0.30	3.62	-0.07
1 - Beverages and Tobacco	1.69	32.28	-0.38
3 - Fuels	0.98	1.12	-1.05
8 - Misc. Manufactures	0.15	1.33	-0.14
B			
2 - Crude Raw Materials	-1.24	-4.99	-0.83
9 - Others	-2.76	-3.62	-2.69
C			
4 - Animal/Vegetable Oil and Fat	1.04	2.91	0.78
5 - Chemicals	0.44	0.97	0.30
6 - Manufactures	0.58	0.72	0.56
7 - Machinery and Transport Equipment	0.22	8.11	0.20

Table 5.16

account for less than 1% of both total and regional imports.

Those imports listed under A indicate trade creation, gross trade creation and trade diversion, the main element here being the expansion of the region as a source of imports. In particular the regional share of food imports in total imports increased from 2.6% in 1965 to 18.7% in 1972, the share of beverages and tobacco increased from 0.2% in 1965 to 50% in 1973 and miscellaneous manufactures from 2.9% in 1965 to 22.5% in 1973, whereas the share of these categories in total imports remained relatively stable.[19] Certainly for those three import categories there appears to have been substantial diversion from extra to intra regional sources. On the other hand a large percentage of total fuel imports has more traditionally come from the regional market in particular from Trinidad-Tobago, so although there was some trade diversion to regional sources this was not evident.

Finally category C covers those imports that experienced an increase in elasticity of total, intra and extra imports implying trade creation, gross trade creation and no evidence of trade diversion - i.e. external trade creation. For SITC-4 and SITC-5 and to a lesser extent in SITC-6, the share of intra imports in total imports increased appreciably, whereas the total share was relatively unchanged. These are all sectors in which the region could have the capacity to increase supply. However, SITC-7 - machinery and transport equipment - improved only marginally in terms of the regions share of total imports, and any change seems more likely to be associated with a decline in total imports. This result is not surprising given the generally limited capacity of the region to supply this type of import.

Section 5.4.3: Jamaica

In the case of Jamaica the import elasticity and expenditure share approach only agree on one of the results- in both cases there was evidence of gross trade creation as shown by the increased importance of intra sources of imports.

19. See Appendix A

CHANGES IN THE INCOME ELASTICITY TO IMPORT
(1960/68 and 1968/73)

JAMAICA

SITC Category	TOTAL	INTRA	EXTRA
A			
0 - Food	-0.51	4.11	-0.71
6 - Manufactures	-0.81	3.02	-0.82
8 - Misc. Manufactures	-0.63	3.33	-0.81
B			
1 - Beverages and Tobacco	0.10	10.13	0.05
2 - Crude Raw Materials	0.53	1.77	0.41
9 - Others	0.01	2.57	0
C			
3 - Fuels	0.21	9.96	-0.46
4 - Animal/vegetable Oil and Fat	0.24	90.82	-0.21
D			
5 - Chemicals	-0.33	-0.24	-0.34
7 - Machinery and Transport Equipment	-1.25	-0.74	-1.28

Table 5.17

On the one hand, the changes in import elasticity indicate gross trade creation, trade diversion and no evidence of net trade creation. Overall this may be associated with trade suppression as well as diversion of imports from non-regional to regional sources. On the other hand, the expenditure share approach indicates a declining domestic share that is diverted to an increasing partner and world share in expenditure, indicating overall, trade creation, gross trade creation and external trade creation so that all sources of imports are improving.

Overall (see table 5.17) there is evidence of trade suppression in five of the product groupings - those listed under A and D. Those under category D - chemicals and machinery and transport equipment - have been characterised by a fall in import elasticities for all sources of imports, although intra imports do not seem to be as strongly affected as extra imports. In fact in SITC-7 regional sources are positive for the first time - i.e. prior to 1972 the share was zero. These changes are likely in part to be due to domestic production.

In the other category - A - where there was evidence of trade suppression there was also evidence of trade diversion from extra to regional sources. In all three of these categories - SITC-0, SITC-6 and SITC-8 - their share in total imports was generally the same in 1973 as it was in 1965 (although manufactures share had fallen), whereas intra imports in total imports increased substantially for food and miscellaneous manufactures.

Category C - Fuels and animal-vegetable-oil and fat - shows evidence of trade creation and trade diversion in favour of imports from regional sources. SITC-4 generally plays a small role in total and intra imports so that small changes may be reflected by large percentage shares and this explains the large increase in the intra import elasticity for this product group as prior to integration intra imports share in total imports of SITC-4 fell rom 8% in 1960 to 0% in 1965 and 1970 and increased to 14% in 1972, and the share of SITC-4 in intra trade followed the pattern - 1.2%, 0, 0, 1.9%.

Prior to the 1970's, fuel from the region accounted for 0.6% in 1965 and 1.2% in 1970 of total fuel imports (in 1960 though this share had stood at 23.9%). By 1972 this share had risen to 19.9% and accounted for 33% of Jamaican imports from the region. The share of oil in total imports increased much more slowly. As in previous cases this process is associated with the increasing role of Trinidad-Tobago as a regional oil supplier, replacing sources outside of the region.

Section 5.4.4: Trinidad-Tobago

For Trinidad-Tobago both the import elasticity and expenditure share results are in agreement as follows.

1. Net trade creation as evidenced by a positive change in total import elasticity and a fall in the domestic share of expenditure.
2. Gross trade creation as shown by an increase in the intra import elasticity and in the partner share of expenditure.
3. External trade creation (no evidence of trade diversion) as shown by an increase in the extra import elasticity and in the world share of expenditure.

In particular the expenditure share approach suggests that 85% of the decline in the domestic share has been diverted to extra area imports, intra area imports only improving marginally.

These results are associated with the fact that the Trinidad-Tobago economy is based on the petroleum industry. This has contributed to a domestic share of expenditure of only 40%, whereas the world share is closer to 57%. As a result trade is very important both as a market for oil and as a source for other imports, and many of the imports required come from outside of the region.

In every category of imports (see table 5-18) there is evidence of trade expansion (positive change in total import elasticity) apart from fuels - SITC-3 - which is expected given Trinidad-Tobago's role as a major regional oil producer. The expansion in practically all categories of

CHANGES IN THE INCOME ELASTICITY TO IMPORT
(1960/68 and 1968/73)

TRINIDAD-TOBAGO

SITC Category	TOTAL	INTRA	EXTRA
A			
0 - Food	0.84	0.26	0.89
1 - Beverages and Tobacco	2.28	4.51	1.87
5 - Chemicals	0.72	0.75	0.69
6 - Manufactures	1.37	8.78	1.32
7 - Machinery and Transport Equipment	1.06	12.39	1.04
8 - Misc. Manufactures	1.45	5.58	1.23
9 - Others	0.17	1.17	0.09
B			
2 - Crude Raw Materials	0.33	-2.95	0.64
4 - Animal/Vegetable Oil and Fat	1.74	-11.43	1.88
C			
3 - Fuels	-0.76	-11.55	- 0.76

Table 5.18

imports is largely a consequence of the oil industry. The economy has concentrated on this area and the increased incomes that have resulted as well as the relative neglect of the other sectors of the economy has effectively increased Trinidad-Tobago's dependence on imports for a broader range of products.

Those imports listed under category A experienced a general expansion in demand from all sources. In particular regional imports of SITC-1, SITC-5, SITC-7 and SITC-8 have increased their share of total imports of each category.

Category B includes crude raw materials - SITC-2 - and animal vegetable oils and fats - SITC-4 - both of which suggest some transfer of source from the region to the rest of the world. In both cases intra-regional imports share in total imports declined in 1972/3 before which time they had risen rapidly. The share of these categories in total trade has not changed much so it appears that the source has been changing from intra to extra regional.

Finally, there is category C which only consists of SITC-3 (fuels). As Trinidad-Tobago is the region's main oil producer it is not surprising that oil imports have declined. At one point falling oil reserves lead to greater imports of oil and though new reserves are now in use the large refineries still require some imported oil in addition.

In general then the rise and dependence on oil has allowed Trinidad-Tobago to expand imports from intra as well as from extra regional sources.

Section 5.5: Conclusions

a Trade Flow Equations

In general, the equations accounted for one third to two thirds of the variation in trade flows. However, there were variations in the way the individual elasticities reacted across equations and different sub-samples of the data. In particular we can make the following points.

(i) The elasticity of the exporters income (a1) did not perform particularly well, generally being non-significant;

(ii) The elasticity of the exporters population (b1) tended to have the wrong sign - positive instead of negative;

(iii) In equation four (exports of the MDC's), a1 had the wrong sign (negative instead of positive) and was non-significant, and b1 also had the wrong sign (positive) but significant;

(iv) Where b1 was significant but positive, a1 tended to be non-significant, possibly suggesting that b1 was positive because a1 was non-significant;

(v) On the import side a2 was generally positive and significant as expected, and if we exclude equation two, a2 and b2 behave as predicted by theory so that trade flows vary positively with income and inversely with population;

(vi) Overall, to the extent that income and population determine trade flows, there seems to be a stronger relationship on the import side, whereas the export side appears to be relatively unimportant in determining trade flows;

(vii) It is also suggested that as it is assumed that merchandise trade is balanced, if this assumption is violated then either the export share or import share in income may be uncharacteristically low for a given population. This is in fact the case for Babados' exports, with a difference of as much as 50% between the share of exports and imports in income. Therefore, on the export side Barbados may be biasing the results downwards, and may account for the unexpected results in equation two (i.e. a1 and a2 being negative and b1 and b2 being positive).

The elasticity of distance (c1) reflecting the resistance to trade, performed as expected being negative and generally significant. In particular we can make the following points.

(i) The effect of distance tended to increase over time in all equations that included trade external to the region;

(ii) For intra-union trade the effect tended to decrease over time;

(iii) The effect of distance was greater for intra-regional trade than for extra-regional trade. This reflects both the initially underdeveloped regional infrastructure and transport systems as well as the lack of regionally tradeable goods, as well as the generally superior transport systems available for trade with the rest of the world.

The dummy variable elasticity for intra-union trade is expected to be non-significant prior to integration and positive and significant thereafter. However, excluding the individual MDC equations the dummy variable was positive and significant both before and after economic integration. This suggests that:

(i) Effects similar to those of economic integration were evident prior to integration and are perhaps associated with the region's history of cooperation as well as its position within the Commonwealth;

(ii) That other factors are the source and integration has had no effect;

(iii) That other factors have declined in importance as integration effects became evident, the two creating a balance;

(iv) That there were other peculiarities in the sample that have affected the dummy variable, in particular the bias introduced by the imbalance in Barbados' trade.

For the four MDC's, the value of the dummy variable is variable both in the size of the elasticity and the individual patterns of change. The overall dummy variable elasticities in the aggregate equations would therefore not be suitable in estimating the effects of integration on individual members. On the other hand if we exclude Guyana, the MDC's do show a similarity over time. In 1967, 1968 and in some cases 1969, the dummy variable although positive is not

significant, and generally prior to integration has much lower values than in the aggregate equations. For Trinidad-Tobago and Barbados when the dummy variable does become significant there is a large increase in value; for Jamaica this change is initially negative. In the individual MDC equations therefore the dummy variable for intra-regional trade does give a clearer indication of integration effects.

b The Expenditure Share and Import Elasticity Results

An overview of the results of these methods can be seen in tables 5.19 and 5.20. At the aggregate level the results of the import elasticity and expenditure share methods show a reasonable degree of agreement. Out of the twelve results, three for each of the MDC's, nine were in agreement which gives us a degree of confidence in using them as part of the evaluation of Carifta/Caricom. Some of the differences arise because of the inclusion of changes in the domestic sector in the expenditure share approach, which in itself gives additional information that is not available from the trade flows alone. However, the expenditure share approach could only be used at the aggregate level and we have to rely on the import elasticities to indicate the changes at the commodity level for each of the MDC's. The disaggregated elasticity approach indicated the changes by SITC category and can be seen in table 5.20.

Whereas these two methods provide an estimate of the total change over a period of time, the dummy variable elasticities of the trade flow model show the pattern of change over time.

In this chapter we have presented the results of the trade flow model, the changes in the income elasticities of import demand and the expenditure share method, based on Carifta/Caricom over the years 1967 to 1976. In particular we were interested in the extent to which:

(i) the trade flow model could determine trade flows in the third world;

EXPENDITURE SHARE
(%Share in Apparent Consumption)

	BARBADOS				GUYANA			
	1966-68	1969-73	Change	Effect[a]	1966-68	1969-73	Change	Effect[a]
Domestic Share DS	53.50	55.20	1.70	No TC	50.90	50.64	-0.26	TC
Partner Share PS	4.70	5.50	0.80	GTC	6.00	8.32	2.32	GTC
World Share WS	41.80	39.30	-2.50	TD	43.10	41.04	-2.06	TD

a) TC = Trade Creation
GTC = Gross Trade Creation
TD = Trade Diversion
No TC = No evidence of trade creation (possible trade suppression)
No TD = No evidence of trade diversion (possible external trade creation)

Table 5.19

EXPENDITURE SHARE
(% Share in Apparent Consumption)

	JAMAICA				TRINIDAD-TOBAGO			
	1966-68	1969-73	Change	a Effect	1966-68	1969-73	Change	a Effect
Domestic Share DS	70.50	68.32	-2.18	TC	43.60	41.24	-2.36	TC
Partner Share PS	0.37	1.10	0.73	GTC	1.14	1.49	0.35	GTC
World Share WS	29.13	30.58	1.45	No TD	55.26	57.27	2.01	No TD

a) TC = Trade Creation
GTC = Gross Trade Creation
TD = Trade Diversion
No TC = No evidence of trade creation (possible trade suppression)
No TD = No evidence of trade diversion (possible external trade creation)

Table 5.19

Overview of Integration Effects[b] associated with change of Income Elasticity of Imports
(1960-68 to 1968-73)

SITC[a] Category	BARBADOS Total	Intra	Extra	GUYANA Total	Intra	Extra
0	No TC	GTC	TD	TC	CTC	TD
1	TC	GTC	TD	TC	GTC	TD
2	TC	GTC	TD	No TC	No GTC	TD
3	No TC	GTC	TD	TC	GTC	TD
4	No TC	No GTC	TD	TC	GTC	No TD
5	No TC	GTC	TD	TC	GTC	No TD
6	TC	No GTC	No TD	TC	GTC	No TD
7	No TC	No GTC	TD	TC	GTC	No TD
8	No TC	GTC	TD	TC	GTC	TD
9	No TC	No GTC	TD	No TC	No GTC	TD
TOTAL	No TC	GTC	TD	TC	GTC	No TD

a) For ceontents of SITC Categories See Appendix B

b) See note a) in table 5.19

Table 5.20

Overview of Intregration Effects[b] associated with change of Income Elasticity of Imports
(1960-68 to 1968-73)

SITC[a] Category	JAMAICA			TRINIDAD-TOBAGO		
	Total	Intra	Extra	Total	Intra	Extra
0	No TC	GTC	TD	TC	GTC	No TD
1	TC	GTC	No TD	TC	GTC	No TD
2	TC	GTC	No TD	TC	No GTC	No TD
3	TC	GTC	TD	No TC	No GTC	TD
4	TC	GTC	TD	TC	No GTC	No TD
5	No TC	No GTC	TD	TC	GTC	No TD
6	No TC	GTC	TD	TC	GTC	No TD
7	No TC	No GTC	TD	TC	GTC	No TD
8	No TC	GTC	TD	TC	GTC	No TD
9	TC	GTC	No TD	TC	GTC	No TD
TOTAL	No TC	GTC	TD	TC	GTC	No TD

a) For contents of SITC Categories see Appendix B

b) See note a) in table 5.19

Table 5.20

(ii) the trade flow model could isolate the effects of economic integration on trade flows;

(iii) other methods could support the trade flow model in a full evaluation of economic integration.

The results of this chapter provide the basic input to the evaluation of Carifta/Caricom in chapter six, and to the eventual evaluation of the extent to which these methods can be used to isolate the effects of economic integration on trade flows in particular.

CHAPTER SIX

EVALUATION OF CARIFTA/CARICOM AND POLICY IMPLICATIONS

Section 6.1: Introduction

Chapter six is an attempt to evaluate regional integration in the Caribbean on the basis of and to extent allowed by the results in chapter five, and should be viewed as one part of an overall evaluation. It is not an attempt to measure the net welfare position of regional integration, but rather an evaluation of the success or failure of a limited number of areas of economic integration with reference to the main objectives of Carifta/Caricom and the instruments used in achieving these aims. Not every aspect of the integration process in the Caribbean will be covered, and some, notably those related to trade flows, will be analysed in more detail than others.

Based on these conclusions and the areas of success and failure in other third world regional groupings it will then be possible to suggest policy implications of West Indian economic integration, and recommendations at a general level for changes in the integration process that may contribute to the development of the region and the attainment of the desired objectives.

By evaluating Carifta/Caricom using the results of chapter five we will be able to judge the extent to which the trade flow approach, and the trade flow model in particular, isolates the effects of economic integration on trade flows in the context of the broader framework of evaluation outlined in chapter four.

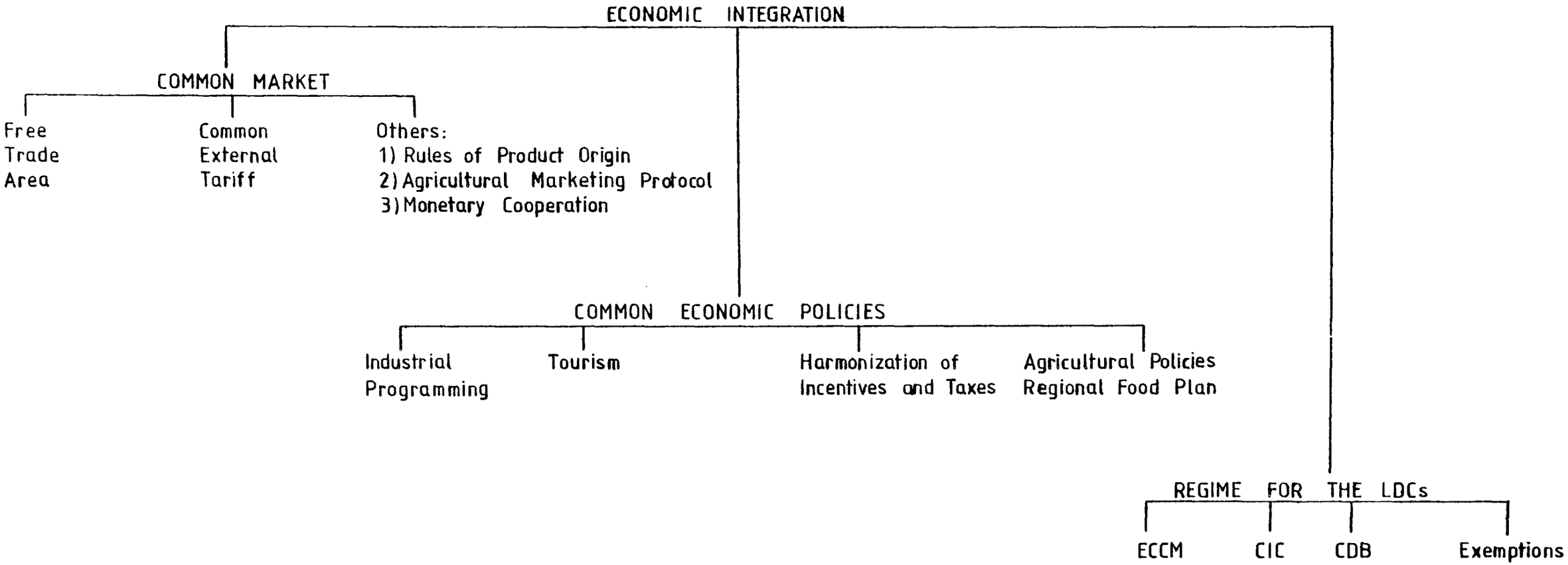
Whereas Carifta was principally a vehicle to promote free trade among the member countries, Caricom was a more complex organisation and represents a more comprehensive scheme of economic integration to achieve the purposes of economic development for the region. However, the purely economic objectives do not make it easy to classify Caricom as a free trade area, a customs union, an economic

community or an economic union. In effect it is a hybrid to the extent that elements of all these standard stages are included.

The three main objectives of CARICOM are (i) economic integration through the creation of a common market, (ii) functional cooperation in areas such as transport, health, etc; and (iii) coordination of foreign policy. In particular we are interested in the first. To achieve the objective of economic integration, four instruments were used, (i) the Common Market; (ii) coordination of common economic programmes; (iii) common action on extra - subregional trade and related activities and; (iv) the special regime for the ldc's. Diagram 6.1 shows the relationship between the objectives of economic integration and the instruments used.

Given the data used, the analysis is principally restricted to the common market, although the common economic policies and the regime for the ldc's will have implications for and effects on the common market.

This chapter is in five sections. Section 6.2 is an evaluation of Carifta/Caricom based on general trade flow data (percentage shares etc.) and the results of the trade flow model, expenditure shares and income elasticity of import demand reported in chapter five. As economic integration can be described as a process or structure of objectives and instruments to achieve these objectives, in section 6.3 we evaluate Carifta/Caricom in terms of the success of objectives and the application of instruments, in particular those instruments associated with the common market and the common policies. In section 6.4 based on the problems observed in other third world integration groupings and what appear to be the basic problems in Caricom, we suggest some general policy recommendations that should be viewed as the possible direction or main areas of emphasis that may help in the future development of the Caribbean region. Section 6.5 presents the main conclusions of this chapter.



ECCM - Eastern Caribbean Common Market
CIC - Caribbean Investment Corporation
CDB - Caribbean Development Bank

D I A G R A M 6.1

Section 6.2: The Common Market and Trade Flows

The principal components of the common market consist of the liberalisation regime or free trade area, the common external tariff as well as those additional instruments (1) required for the functioning of the common market.

In the CARIFTA Treaty, trade liberalisation was the most specific provision. In 1968 trade was immediately freed between member countries from import and export duties and non-tariff barriers. As tariffs to third countries initially remained unchanged, rules of origin were required to determine whether any particular item qualified for duty free treatment within the region.(2) However because many raw materials and intermediate imports were not produced within the region, some two hundred imported items were incorporated in a Basic Materials List and treated as though they were of regional origin when used in the manufacture of products exported to other countries within the region.

By 1973 (when Caricom was established), 90% of intra imports between the MDC's and over 80% by the ldc's had been freed of all trade barriers. However by 1978, in an effort to deal with acute foreign exchange shortages and balance of payments difficulties, Jamaica and Guyana adopted protectionist trade policies including quanitiative restrictions and licensing of intra-regional goods thereby limiting the freedom of trade. In Jamaica these restrictions were removed in 1979.

Unlike the free trade area which has for the most part been implemented the common protective policy consisting of the common external tariff (CET) and a regime for regional quantitive restrictions has not been effectively

1. These include a system of product origin and monetary cooperation.
2. To qualify for duty free treatment, 50% of value-added had to originate within Carifta; for ldc's this was later reduced to 40%.

implemented. (3) Basically there are four seperate tariffs - the CET for the MDC's, tariffs for the ECCM, the Belize Tariff and the Montserrat Tariff. The schedule of the CET was expected to be adopted by all the member states by 1985, and as of October 1977 almost all the CET rates had been implemented among the MDC's, but the 13th Common Market Council Meeting (December 1978) after examining the progress member countries had made since the 12th Meeting, decided that the process of integration could be better served by advancing the date for the adoption of a CET. As a result the MDC's agreed to introduce the restructured CET by January 1979, and the ldc's later in 1979.

The widespread, but differing national practices of exempting certain, industrial products from import duties represents a special problem for the operation of the CET. To overcome this difficulty the CET Agreement established an Exemptions list of those industries where member countries would continue to allow on a discretionary basis, duty exemptions for imported inputs. However, this list is in fact a consolidated list of all nationally exempted industries and covers almost every existing industrial activity in the Commonwealth Caribbean.

The basic principle underlying the structure of the CET has been to charge very low rates of duty (6-8%) on capital goods and raw materials required for regional industries, slightly higher rates on semi-manufactured articles, and the highest rates on final products. This structure of effective protection provides excessive protection to final products while discouraging backward linkages which could encourage additional production and trade within the area. High protection rates are generated mainly by tariff exemptions on raw materials and other inputs, combined with a low percentage value-added in many firms.

With this background we can now analyse the results

3. See El-Agraa (1982) p.196.

and effects of the Common Market in terms of trade flows. This analysis is based on the shares of regional in total trade, the geographic distribution of trade, the measurement of the importance of the regional market for individual MDC's, as well as on the trade flow model, income elasticity of import demand and the expenditure share results of chapter five.

Section 6.2.1: Share of Regional Trade in Total Trade

a Regional Aggregates

As can be seen in table 6.1 the share of regional trade in total trade has grown, increasing its share from 4.5% in 1960 and 5% in 1967 - just prior to the formation of CARIFTA - to over 11% by 1972 - just prior to the formation of CARICOM. This evidence certainly points to the trade expanding effects of the free trade area. However since 1973/74 the regional share declined to 6.2% in 1978, and although it subsequently rose to 7.4% in 1981, it has not reattained the levels of 1972. However not all of these changes can be attributed to economic integration, as some part of the decline can be attributed to the energy crisis of 1973/74 and the subsequent world recession, the results of which continued through to 1978, regional trade improving thereafter.

It is likely that the decline in regional trade was also associated with the types of activities that were encouraged and maintained by the structure of effective protection, in particular the production of final products, with backward linkages being discouraged. The restriction of trade may also be associated with the small size even of the total regional market, the restricted supply of resources and the competitive rather than complementary nature of the member economies.

It is expected that most of the expansion of trade directly associated with the free trade area would take place over the period in which tariffs are being reduced.

PERCENTAGE SHARE OF REGIONAL TRADE IN TOTAL TRADE
FOR SELECTED THIRD WORLD REGIONAL GROUPINGS

	1960	1970	1972	1974	1976	1978	1979	1980	1981
CARICOM	4.5	7.3	11.1	7.9	6.7	6.2	6.6	6.4	7.4
LAFTA/	7.7	10.2	11.6	11.9	12.8	16.9	13.7	13.5	12.6
Andean Pact	0.7	2.3	2.5	3.1	4.2	4.2	3.3	3.5	3.4
CACM	7.5	26.8	22.7	24.8	21.6	19.2	19.3	22.0	20.7
ASEAN	21.7	14.7	14.5	12.8	13.9	13.2	17.0	17.8	18.9
ECOWAS	1.2	2.1	4.1	3.1	3.1	3.5	3.8	3.9	4.6

SOURCE: UNCTAD Handbook of International Trade and Development Statistics

Table 6.1

By the time CARICOM was established in 1973, 90% of intra imports between the MDC's and over 80% by the ldc's had been freed of all trade barriers. Therefore as expected the major expansion in regional trade occured over the period 1967 - 1973, as indicated by the share of regional in total trade. However the extent of the expansion in regional trade is restricted as can be observed in most other third world regional groupings where the initial expansion in regional trade eventually declined and stagnated, only the CACM and to a lesser degree Asean achieving reasonably higher shares of intra regional trade (table 6.1). One of the suggested reasons for this is that the limit of the 'easy' stage of import substituting industrialisation has been reached

b Regional Share by SITC Category

On its own the share of regional trade in total trade is of limited usefulness and is complemented here by the share of individual SITC categories in regional trade. Through this we can isolate those sectors that were the most important and dynamic in the growth of intra regional trade.

The main features over the period 1960 to 1974 are summarised in table 6.2. Between 1960 and 1974 the share of food products in regional trade declined from 33% to 22.7%, and the share of raw materials fell from 42% in 1960 to 25.7% in 1973. However in 1974 the share of raw materials rose to 42.4%, largely accounted for by an increase from 24.7% in 1973 to 39.2% of fuel trade within the region, this being associated principally with the oil price increases over 1973/74. However the main feature has been the growth of trade in manufactured goods from 23.5% in 1960 to 47.9% in 1973, and between 1972 and 1976 Caricom markets absorbed more than 50% of the regions exports of manufactures, in 1975 alone 82% of the total manufacturing export went to Caricom markets. However the role of economic integration in this growth has to be qualified as this trend was evident prior to the formation

DISTRIBUTION OF INTRA-CARICOM TRADE BY SECTOR
(percentage)

SITC	SECTOR	1960	1965	1967	1970	1971	1973	1974
0+1	Foodstuffs	33.6	33.9	33.6	27.3	28.3	26.3	22.7
2+3+4	Raw Materials	42.0	37.0	30.3	28.4	26.2	25.7	42.4
5+6+7+8	Manufactures	23.5	28.3	36.0	43.8	45.4	47.9	34.8
9	Others	1.0	0.8	0.1	0.4	0.1	0.1	0.1

Source: Compiled from Chernick (1978) and IADB (1978)

Table 6.2

of CARIFTA, Among manufactured products, the most dynamic categories have been clothing and footwear, and, to a lesser extent, chemicals, pharmaceutical products and cosmetics. Furthermore, only a few types of products are traded within the region. Trinidad-Tobago has exported petroleum derivatives, cement, fertilizers and certain durables for domestic use; Jamaica has exported mainly food, electrical equipment and chemical products; Guyana has exported mainly agricultural products, and Barbados mainly manufactures and textiles. The ldc's export mainly agricultural products to the MDC's.

So although integration may have been important in the growth of manufactured trade, it was of a limited range of products, and the seeming concentration of manufacturers on the region could possibly be an indication of lack of competitiveness in world markets Under these circumstances, based on the small size of the regional market, industrialisation based largely on the 'home' market will rapidly be constrained especially after local demand is satisfied by the easier stage of import substituting industrialisation.

c Geographic Distribution and Shares of Regional Trade in Individual MDC Trade

One of the problems of a regional grouping based on free trade is that if industry is concentrated in a limited number of the more developed members this polarisation of activity will reinforce itself creating a greater division between the more and less developed members. Removal of intra-union tariffs compounds this problem and will be revealed in the concentration of trade flows in the region. This process can be observed in the Caribbean where although between 1967 and 1973/74 individual country shares of total intra Carifta/Caricom trade has varied, certain features do stand out, in particular the fall in the ldc's share of imports from 33.1% to 10.1% (See table 6.3). The largest share on the import side in 1974, was that for Jamaica (31.4%) although Guyana (29.7%) has tended to have

Percentage Share of Total Caricom Trade

	BARBADOS		GUYANA		JAMAICA		TRINIDAD-TOBAGO		LCD's	
	1967	1974	1967	1974	1967	1974	1967	1974	1967	1974
Imports	14.0	15.6	26.9	29.7	9.3	31.4	16.7	13.2	33.1	10.1
Exports	6.5	6.7	23.0	13.5	12.3	14.2	51.6	61.9	6.6	3.7

Source: Chernick (1978)

Table 6.3

the largest import share. On the export side Trinidad-Tobago has dominated regional trade helped to a large extent by the petroleum industry. In particular by 1973/74 this share had increased to 61.9%. The largest single trade flow has been between Trinidad-Tobago and Guyana, mainly oil and oil related products. These results indicate a large and growing concentration of trade among the MDC's who have a broader range of resources and a more developed industrial base. As such trade flows do suggest that polarisation is a problem within the region.

As a result of the differences in shares in trade between the export and import sides an analysis of the intra regional trade balance in 1967 and 1974 revealed a) that while in 1967 Trinidad-Tobago and to a much lesser extent Jamaica recorded an intra regional trade surplus, only Trinidad-Tobago was a net exporter by 1974: b) between 1967 and 1974, all the Carifta countries except Trinidad-Tobago experienced a deterioration in their trade balance, and the largest absolute decline was experienced by Jamaica. (4)

We can also examine the importance of intra regional trade for the individual MDC's by the share of intra trade in their total exports and imports (Table 6.4). On the import side Guyana has the largest share of intra in total imports, rising from 12% in 1965 to over 26% by 1974, a large increase between 1973 and 1974 being associated with the oil price rises at that time. At the other extreme Trinidad-Tobago relies the least on the region for its imports.

On the export side Barbados is the most dependent of the MDC's on the regional market, with the export share rising from around 10% to over 24% in 1974. Trinidad-Tobago's share is also higher and as mentioned above this is associated with the oil industry.

e Summary

Since at least 1965/67 various changes have occured

4. See Chernick (1978) p.31

Individual MDC Share of Intra Trade in Total Trade

	1960	1965	1970	1972	1973	1974
IMPORTS						
BARBADOS	13.2	10.3	11.3	13.5	13.0	17.3
GUYANA	9.9	12.1	14.1	17.3	13.5	26.5
JAMAICA	4.6	2.0	1.8	5.4	5.3	7.6
TRINIDAD-TOBAGO	2.6	1.9	2.5	2.8	2.6	1.6
EXPORTS						
BARBADOS	10.2	9.9	18.0	28.1	26.1	24.3
GUYANA	14.7	10.8	9.1	12.6	14.8	11.2
JAMAICA	1.4	2.0	3.7	5.9	6.3	4.4
TRINIDAD-TOBAGO	6.9	5.7	8.9	10.9	10.6	7.1

Source: Derived from Chernick (1978)

Table 6.4

in the regional market in the share, composition and distribution of regional trade. In particular the share of intra trade in total trade increased and then stagnated, this being a common feature in other third world groupings and perhaps associated with the limitation of trade liberalisation in encouraging new activities as well as the limits of the regional market in supporting industry. Both food and raw materials trade have declined in importance, although in 1974 the oil price increases boosted this sector. The main feature however, has been the growth of manufactured goods in regional trade, from 23.5% in 1960 to 47.9% in 1973.

Geographical distribution has also changed with the emphasis still on the MDC's On the import side there was a large fall in the ldc's share of regional imports, and an increase in Jamaican imports. Trinidad is the dominant regional exporter and although this is largely associated with the oil industry, manufacturing is also important. As measured by the individual MDC's share of intra trade in total trade, Guyana relies most on the region for imports (26% in 1974) which is partly explained by oil imports from Trinidad-Tobago, while on the export side Barbados depends most on the regional market.

This provides a basic background to the evaluation of Carifta/Caricom using the results of chapter five.

Section 6.2.2. Measured Effects of Carifta/Caricom

In this section we use the results of chapter five as the basis for evaluating Carifta/Caricom. When discussing the results of the trade flow model, import elasticities and expenditure shares, it was accepted that any results would have to be interpreted with care, in particular we could not use the results as measures of the overall effects of economic integration. While still recognising all the problems with the model we will present the effects of economic integration based on these results in the next section.

As opposed to the other two methods, the trade flow model and more specifically the dummy variable for intra regional trade really only indicates the changes in intra union trade, generally referred to as gross trade creation. However, it was also the case that some of the effects of integration manifested themselves in changes in the other variables over time. This can be observed for example by the way the elasticity of distance changes over time in particular. However, immediately below we are referring only to the dummy variable and hence to gross trade creation.

a Trade Flows and the Dummy Variable

The results from the aggregated trade flow equations (numbers 1 - 8), generally indicate that there was a trade expanding effect on intra regional trade flows, that may be interpreted as gross trade creation (GTC). However in every case this effect was evident prior to the formation of Carifta, and the elasticities were similar throughout the pre and post integration periods. It may be the case as suggested above that there were trade enhancing effects prior to 1967 that were maintained by the formation of Carifta, this being a possibility given the previous attempts at regional cooperation. (5) However we cannot determine if this was the case from these results. The results therefore do not allow us to determine when the effects of Carifta/Caricom were first in evidence.

If we compare equations three and four (MDC exports and imports) there is a clear indication of a greater regional effect on intra-regional exports than on the import side. This does provide some indication of the importance of the region for exports of the MDC's, and as will be seen below, for certain categories of goods, in particular for manufactured goods, the regional market is very important.

One other possible indicator of regional effects is

5. For example the West Indies Federation 1958 - 62.

the decline in the resistence effect within the region as represented by the distance variable. This may be associated with both improvements in the regional transport infrastructure and the supporting marketing facilities as well as the production of goods that are demanded within the region.

Overall the aggregated equations suggest evidence for gross trade creation although this was evident prior to formal integration, with the effect being stronger on the export side. It appears however that although these aggregate results show very little net effect on the region as a whole, the results for the individual MDC's show much clearer integration effects, and it is likely that Guyana and Barbados have to some extent distorted the aggregate results. Whereas the dummy variable for Guyana is large at the begining of the period it subsequently declines, whereas for the three other MDC's the results are more in keeping with the expected integration effects (see table 6.5).

The individual country equations provide us with information on the distribution of the effects of integration, as well as when these first appeared and how they evolved over time. From these we can suggest the relative extent to which the regional effect was important for each of the members. However it is not possible to directly compare these elasticities across equations.

Barbados, Trinidad-Tobago and to a much lesser extent Jamaica, show definite regional effects (GTC). In the case of Barbados the elasticity of the dummy variable increased by 145%, and gives a clear indication of some trade enhancing effect between 1968 and 1969. Trinidad-Tobago shows a more gradual increase over time, until in 1971 there is a larger increase and the dummy variable becomes significant. In Jamaica the result is not so obvious, although the effect seems to be slightly stronger from 1972. For these three countries there appears to have been an integration effect associated with gross trade creation. Trinidad-Tobago in particular benefitted from the oil

ELASTICITY OF THE INTRA-UNION DUMMY VARIABLE

	BARBADOS	GUYANA	JAMAICA	TRINIDAD-TOBAGO
1967	2.9	9.3*	4.9	1.8
1968	2.4	10.2*	4.4*	2.2
1969	5.9*	10.0*	4.7*	3.2
1970	5.2*	7.5*	4.8*	3.9
1971	6.0*	5.3*	4.1*	5.3*
1972	5.8*	7.7*	5.3*	6.6*
1973	4.2*	8.6*	5.3*	5.6*
1974	4.4*	7.6*	4.5*	6.0*
1975	4.7*	7.7*	5.5*	7.6*
1976	5.9*	6.6*	3.9*	6.9*

* Indicates significance at the 95% Confidence level

Source: Individual MDC Trade Flow Equations (Nos. 9-12)

Table 6.5

industry, becoming a major regional supplier of petroleum and petroleum products, this position being enhanced by the oil price rises in 1973/4. For Barbados the regional market has become important for manufactured exports. On the other hand Guyana seems to show a decline in the trade expanding effect, the dummy variable declining from a maximum in the late 1960's, although the value was greater than for any of the other MDC's except in 1971 and 1976.

b Income elasticities of Import Demand, Expenditure Shares and the Importance of the Regional Market

Whereas the dummy variable in the trade flow model was really only able to indicate the presence of gross trade creation (as well as timing and the distribution of the effects) the import elasticities and the expenditure share approaches can give a more extensive picture of the effects. For the four MDC's the results are presented in Table 6.6.

In every case there was evidence of gross trade creation as already established in the trade flow model, but we can also see from these results the type of changes that have occured more generally. Summarising the results from chapter five we have the following effects occuring for each of the MDC's.

Barbados - Although regional trade has expanded there has also been an element of trade suppression , with a greater domestic share in expenditure, both of these effects being at the expense of imports from outside of the region. This implies that not only is Barbados importing more from the region, it also is providing more of its own requirements.

Guyana - Both results indicate an expansion in imports from the region as well as a net trade creation effect. Whereas the elasticity result indicates no trade diversion the expenditure share approach indicates trade diversion away from the extra regional sources Basically both methods suggest an increase in partner share of Guyana's imports, though it is not agreed whether this was trade creation or trade diversion.

ELASTICITY OF IMPORT DEMAND AND EXPENDITURE SHARES

(Changes between 1960/68 and 1968/73)

	ELASTICITIES			EXPENDITURE SHARE		
BARBADOS	No TC	GTC	TD	No TC	GTC	TD
GUYANA	TC	GTC	No TD	TC	GTC	TD
JAMAICA	No TC	GTC	TD	TC	GTC	No TD
TRINIDAD-TOBAGO	TC	GTC	No TD	TC	GTC	No TD

Source: Tables 5-19 and 5.20

Table 6.6

Jamaica - The results for Jamaica only agree on the existence of gross trade creation. The elasticity results suggest trade diversion and trade suppression, whereas the expenditure share approach indicates a declining domestic share that is diverted to an increasing partner and world share.

Trinidad-Tobago - As in the case of Barbados, both methods agree in their results. There appears to have been a general expansion in imports from every source, and a decline in the domestic share of expenditure. This is associated with the dominance of the oil industry, and perhaps as well, increased imports of industrial inputs.

For each of the MDC's, we can, by looking at the results disaggregated by SITC categories (table 6.7), determine how each of the sectors were affected. However these results are based only on the elasticity method and so there is no direct measure of domestic changes.

The data for the four MDC's has been reclassified into the five changes that were observed (general trade suppression, trade suppression and GTC, GTC, external trade creation, and general trade expansion, see table 6.7. For each of the MDC's, the ten SITC categories are listed under the appropriate headings, so we can analyse the effects by the observed changes across countries.

1. General Trade Suppression which is represented by a decline in all the elasticities. In general this can arise both from an overall decline in demand as well as from a greater share of expenditure on domestically produced goods. As such, it can represent both import substitution and a recession. However with the background information available in chapter two we can make the following suggestions. First, in the case of Trinidad-Tobago, the decline in oil imports is not surprising given Trinidad-Tobago's oil and gas reserves and their role as the main oil exporter in the region. In this case we can state that there was an increase in domestic production that is probably unrelated to integration as such. For the other three MDC's the categories included were generally

EFFECTS OF INTEGRATION BY SITC CATEGORY

	1	2	3	4	5
BARBADOS	4,7,9	0,3,5,8	1,2	6	-
GUYANA	2,9	-	0,1,3,8	-	4,5,6,7
JAMAICA	5,7	0,6,8	3,4	-	1,2,9
TRINIDAD-TOBAGO	3	-	-	2,4	0,1,5,6,7,8,9

KEY:

1 - General Trade Suppression
2 - Trade Suppression and Trade Diversion to Region
3 - Gross Trade Creation
4 - External Trade Creation
5 - General Trade Expansion

Table 6.7

Finally we can look at the importance of the regional market for various categories of exports and how these have changed over time. To do this we compared the percentage of regional exports in total exports for the ten SITC categories for the years 1965, 1970 and 1973.

In table 6.8 column 1a shows those categories that depended on the regional market for over 50% of their exports in every year, 1b shows those in 1973. Column 2 shows those whose percentage share increased over the period. Column 3a shows those that rely on the external market, with a regional share of less than 20%, in every year; 3b shows those in 1973. Column 4 shows those whose share declined over the period.

The main point is that the majority of the categories that depend on the regional market can be classified as manufactured goods (as opposed to non-manufactured), while those that depend on the external market are generally the primary oriented categories (ie. food, fuel and raw materials).

The importance of the regional market can be seen in certain categories below, where the intra trade share of each category of exports is greater than 80% in 1973.

Barbados - Animal/Vegetable oils and fats, Chemicals, and Manufactures.

Guyana - Fuels, Animal/Vegetable oils and fats, Chemicals, Machinery and Transport Equipment, and miscellaneous goods.

Jamaica - Animal/Vegetable oils and fats, Chemicals, and Machinery and Transport Equipment.

Trinidad-Tobago - Machinery and Transport Equipment, and miscellaneous goods.

It seems that generally non-traditional exports depend to a high degree on the regional market, and although for some of the categories this was true prior to integration, manufactured goods in general have increased their dependence more on the regional market.

DEPENDENCE ON REGIONAL MARKET BY SITC CATEGORY

	1a	1b	2	3a	3b	4
BARBADOS	1,4,5	1,4,5,6,9	0,1,3,4,6,9	0,3	0,3,7	2,5,7,8
GUUYANA	5,7,8	3,4,5,6,7,8	0,1,2,3,4,5,6,8	1,2	1,2,9	7,9
JAMAICA	-	4,5,6,7	0,1,3,4,5,6,7,8	0,1,2	0,1,2,9	2,9
TRINIDAD-TOBAGO	4,6,7,8	4,6,7,8	0,1,2,3,5,6,7,8	2,3	1,2,3,9	4,9

KEY:

1a - Depend on regional market for over 50% of exports (1965-73)
1b - Depend on regional market for over 50% of exports in 1973
2 - Percentage share increased over 1965 to 1973
3a - Depend on external market, with regional share of less than 20% (1965-1973)
3b - Depend on external market, with regional share of less than 20% in 1973
4 - Percentage share fell over 1965 to 1973

Table 6.8

Section 6.3: Evaluation by Objectives and Instruments

In section 6.2, integration was evaluated by the more traditional method based on trade flow data, however, as economic integration can be described as a process or structure of objectives and instruments to achieve these objectives, in this section we will evaluate integration in terms of the success of objectives and the application of instruments. Basically we are looking at the extent to which instruments have been implemented. This approach is important especially as seen in chapter one that many of the problems associated with the success or failure of various aspects of integration were associated with the non-application or misapplication of the designed instruments. To an extent this is an exercise in judging the degree to which the members or those in control of the integration process applied the treaty. Although this is not an evaluation of integration as such it can be used as part of a discussion of the problems facing the region. The instruments discussed are those associated with the common market - free trade area and common protective policy - and the common economic programmes.

The free trade area has been discussed above and little needs to be added here. Overall the free trade area was successfully implemented, qualified by a Basic Materials List that allowed intermediate inputs not produced within the region to be treated as though they were of regional origin. However the freedom of trade was limited in 1978 by the adoption of protectionist trade policies by Jamaica and Guyana to deal with foreign exchange shortages and balance of payments difficulties. Jamaica removed these restrictions in 1979. There were also complaints that price controls and the activities of state trading corporations were also restricting trade.

This led to a review of Article 28 of the Treaty (import restrictions arising from balance of payments difficulties). As a result, the Caricom Council decided that even when a member state was forced to impose

restrictions, special consideration would be given to the position of the ldc's.

The Common Protective Policy (CPP) which consists of the common external tariff (CET) and a regime for regional quantitative restrictions is still not totally implemented. The agreement establishing the CET was signed in July 1973, coming into effect for the MDC's in August 1973, although a phasing in period was allowed for certain sensitive products. By the end of 1977, almost all the CET rates had been implemented among the MDC's. The CET agreement is qualified by an Exemptions List which allows duty free exemptions on certain imported inputs. This list is however a consolidated list of all the nationally exempted industries.

In practise there are still four separate tariff regimes - the CET for the MDC's, the ECCM tariff, the Belize tariff and the Montserrat tariff. All of these regimes were to be phased in by the end of 1981. The schedule of the CET was expected to be fully adopted by all the member states by 1985, but the 13th Common Market Council meeting held in December 1978, after examining the progress member countries had made, decided that the process of integration could better be served by advancing the date for the adoption of a CET. Consequently the MDC's agreed to introduce the restructured CET by 1979.

Under Article 33 of the Treaty the members were to administer their quota regulations and to consult on harmonisation with a view to attaining common regional quantitative restrictions as soon as possible after 1981. However the difference between the national quota regulations as well as those of the Exemptions List provisions have created a regional trade regime that provides little common protection on inputs or outputs.

Certainly throughout the 1970's, the common protective regime has not achieved the application required for it to be considered a common policy, although it is to be hoped that in the future it will be fully implemented. However the effects of the levels of tariffs and the

exemptions to common import tariffs has contributed to a structure of effective protection that has created a bias against the production of industrial inputs and backward linkages. As a result the growth of manufacturing is likely to be constrained by the size of the regional market and export markets will have to provide future impetus to growth. At the same time this type of manufacturing will do little to help in reducing imports as the rest of the world supplies the necessary inputs.

One of the more important areas of 'positive' integration is concerned with the active encouragement of economic activities and involves coordination of economic policies and development planning. In third world economic integration, the greatest benefits are expected from intervention in the allocation and planning of industry in particular. In the case of Caricom the two main areas under this category were the promotion of industrial development by the programming of industries, and the adoption and application of the plan for the rationalisation of agricultural production.

The objectives of industrial planning centred around the greater use of regionally available raw materials, the establishment of interconnected industries, the achievement of economies of scale and industrial efficiency, and the equitable distribution of the benefits of industrialisation. The last has been a major problem area in most other regional groupings. (6) Industrial policy also included the harmonisation of incentives to industry.

Although substantial technical work has been done for example on the pulp and paper, and the cotton and textile industry, and projects for the production of aluminium, the programme of industrial development has not made notable progress. Overall the productive sectors of the members have not been integrated to the extent that would be required if the area was to support any major industrial base.

6. In particular the East African Community

'Caricom has approached the issue on a sector by sector basis rather than with the use of a grand macro-economic perspective plan. Thus there is no provision for major regional planning and regional programmes are seen as additions to, rather than as substitutes for national sectoral programmes'. Although a sector by sector approach may be easier to implement, with the small size of the regional economy a macro plan may be the most efficient in guiding efficient resource use. Furthermore, 'at the institutional level the multinational enterprise has been used as the mechanism for implementation ... these do not undertake the entire regional production but will seek to promote the development of production in member states and operate in a manner similar to management and service companies'. (7)

By 1978 with plans to establish joint development projects having been abandoned by most member governments, Trinidad-Tobago, with their funds from the oil industry, embarked on its own development programme. To an extent this underlines the role regional planning has played as an addition to, rather than as a replacement or framework for national plans.

Cooperation in agriculture has a longer tradition than that of industry, starting with various producers associations in the sugar and banana trade. At the time of the Carifta treaty the Agricultural Marketing Protocol (AMP) was signed. The AMP was an arrangement for marketing agricultural products under which certain specified products were traded on the basis of agreed prices. The AMP was extended by the Guaranteed Market Scheme (GMS) under which the MDC's agreed to purchase specified quantities of certain agricultural products from the ldc's. However these instruments did not have the effect of increasing intra-regional trade at the expense of imports to any marked degree.

The AMP was a cautious approach to intra-regional

7. El-Agraa (1982) p.197

trade promotion for a limited range of commodities. It also appeared that the MDC's were using the AMP as a means to restrict the quantity of imports from within the region by not declaring deficits and thus encouraging domestic import substitution at the expense of the ldc's. (8)

The treaty establishing Caricom also created new instruments and institutions for the promotion of agricultural development, in particular a regional food plan (RFP) was approved in 1975. The RFP was intended as a supplement to national programmes, with the objective of greater regional self-sufficiency in the production of foodstuffs. In 1976 the Caribbean Food Corporation (CFC) was created as an instrument for the operations of the food plan.

Various projects have been started under the RFP including a dairy project in St.Vincent, feasibility studies in Belize for production and processing of milk, in Jamaica for sheep and goat multiplication, calf rearing and dairy production. In 1975 the governments of Trinidad-Tobago, Guyana and St.Kitts-Nevis agreed to found a multinational enterprise for the production, storage, transport and marketing of maize and soybeans, and in 1978, the first crop of the corn and soybean project in Guyana was harvested.

The coordination of agricultural policy appears to have been relatively more successful to date than the industrial projects. In part this may be the result of the growth in the region's imports of food that mean there is extensive potential for agricultural import substitution.

Section 6.4: Policy Implications and Recommendations

Economic Integration in the Commonwealth Caribbean has a long history, especially when compared to many other third world groupings. It has been successful in some areas, for example the free trade area, whereas it has not reached full potential in others, however, to some extent it can be considered a success in that it is still

8. See Chernick (1978) p.127

functioning and evolving. To a degree some of the problems of Carifta/Caricom are common to all of the Third World. In particular those associated with first the oil price rise and then the subsequent world recession as well as the trend toward greater protectionism in the North. All of these factors have contributed to the less than full success of economic integration. As such, Caricom does provide a base for future developments.

Whereas Carifta may be considered a success to the extent that the free trade area was implemented and regional trade flows increased as manufacturing industry developed, this growth seems to have been restricted by the size of the regional market.

The formation of CARICOM should have provided the framework for further growth and development through 'positive' integration - through the regionwide planning of industry and agriculture, the development of backward linkages, and industry interconnected across the region. However Caricom has failed to achieve this objective to date, though this should be qualified, as integration is viewed here as a long term strategy and hence positive results may not be expected for some time. However Caricom as a basis for future development may be questioned. As seen above the common protective regime is not considered to be common, and has not yet had the effect of providing consistent protection across the region. The result of the structure of the CET, and the Exemptions List has not led to a regionwide framework of industry, rather protection still seems effectively to be at the national level (as a result of the Exemptions List). The structure of effective protection has not encouraged backward linkages, resulting in a manufacturing sector dependent on imported inputs, and this "has been a major cause of the slow trend towards regionalism and the retention of a good deal of national auturky". (9) It is also questionable whether most of the manufacturing activity in the region

9. Ranis (1982) p.6.

would be competitive in world markets, (10) and continued dependence of this sector on the regional market will be a problem for future growth.

In 1980 the Caricom Council reviewed the functioning of the Caribbean integration movement and made recommendations for its improvement during the 1980's. The evaluation was prompted by the perception of some that CARICOM was serving largely as a trading group, whereas its role as outlined in the Treaty was to promote Economic Integration and to consolidate and strengthen the bonds which have historically existed among the Caribbean member states.

The evaluation indicated that CARICOM's lack of progress was attributable to an absence of understanding as to what actions were required to implement integration, and not to weaknesses in the concept of integration itself. Central to the integration strategy is an increased emphasis on joint planning and cooperation in the areas of production, external trade, and economic policies and programmes.

To an extent part of the problem is a lack of dynamism in the integration process, that is perhaps to be expected during a period of world recession when most countries tend to become increasingly protectionist. However although some of the members of Caricom in particular Trinidad-Tobago, are capable of developing outside of the integration framework, some form of economic integration is necessary for the development of the region as a whole.

Some of the possible directions that CARICOM could take are discussed below in the framework of general policy recommendations. These recommendations are more general comments on development and integration than detailed policy recommendations for CARICOM alone, and may be viewed as some possible solutions to the problems faced by third world groupings in general.

Based on the problems observed in other third world

10. Ranis (1982)

integration groupings and what appear to be the basic problems in CARICOM, we can suggest the following recommendations.

(i) Free Trade Area

Although it has been suggested that the free trade area is one of the more successful aspects of CARIFTA/ CARICOM, it has faced certain problems like those in 1978 with Guyana and Jamaica imposing trade restrictions. In general, if free trade is viewed (within the region) as being desireable, then all factors that restrict trade should be removed. Removing tariffs on their own does not create an area of free trade. It is accepted that some members, in particular the ldc's do require some protection of their economies within the region, and this should be allowed for, although strict allocation of industries or plants in line with regional demand could make even this protection redundant. It is also desireable that the free trade area not be open to negotiation in terms of the rate of tariff removals; as seen in the CACM, immediate and/or automatic tariff reductions seem to have been a more successful strategy. The free trade area in CARICOM is reasonably established and the likely problems it faces are perhaps more easily dealt with by policing of the system.

(ii) Common Protective Policy

As has already been discussed above, the common protective policy currently favours final products and tends to discourage backward linkages in industry. It has been suggested that this is the result of the escalating tariff and the Exemptions List that encourages the importation of intermediate inputs and the export of a limited range of manufactured consumer goods. Apart from the effect of constraining industry, this process results in a low value-added in industry. This is a serious concern for the region as import substitution based on consumer goods will be restricted by the size of the

regional market, and manufacturing still depends to a significant degree on the regional market. The common protective policy therefore has to be ammended in such a way as to encourage the local production of required intermediate inputs. Higher rates of CET or removal from the exemptions list would be one means of encouraging the production of selected inputs. However this is likely to be opposed by those companies producing final products who would have to face initially higher costs of inputs from regional producers. Direct allocation of intermediate industries aided by subsidies is also likely to be needed.

(iii) Common Economic Policies - Industrial Planning

As has already been argued, a free trade area or customs union although it may provide a necessary framework for, will not on its own be a successful policy of industrialisation, industrial planning being necessary if industry is to be developed. However, the CEP has not been particularly successful in CARICOM, with few projects being implemented to date. As mentioned above the region does not have a 'grand macro-economic plan' for regional industrialisation and it may be that some broader framework for industrialisation is needed. At the same time national industrialisation plans should be a part of the regionwide plan, rather than at the moment where the national plans dominate. One approach to developing industry has been to identify and then allocate industries to each of the members, thereby assuring a fairer distribution of industry as well as ensuring that the individual plants or industries fit together in an integrated framework. For most of the heavy and intermediate industries the regionwide market is required and haphazard development of industry in such a small regional economy may be a hindrance to development. It may also be possible to allocate different categories of industry to the MDC's and to the ldc's, according to available labour and other resources and infrastructure. For example, heavier industry may be allocated to Trinidad-

Tobago and Jamaica, whereas the ldc's would be encouraged to concentrate on the food industry, textiles, general consumer goods, as well as take a part in the heavier industries by providing certain inputs that can be produced on a smaller scale. Overall the argument is for a regional plan for industry in which linkages between processes and sectors are emphasised, individual plants being allocated by regional comparative advantage, and with a view to a fairer distribution of the benefits of industrialisation.

(iv) Exports

It appears that the basis for most industry in Caricom has been the regional market. However this will place a restriction on the extent to which industry can grow. Growth of manufacturing industry in the future will depend on the extra-regional market, and to be able to access this market Caricom industries will have to be competitive and efficient. Although it may be possible to establish industries specifically for the world market, this would leave the region in a vulnerable position, especially during periods of recession. However, because of the small size of the regional market, greater emphasis will have to be placed on expanding into the world market, to the industrialised countries as well as in the context of regional cooperation among developing countries, and changing the structure of exports away from primary products. This process is a necessary complement to the regionwide industrialisation policies and programmes.

(v) Agriculture

Although agricultural policy appears to have been reasonably successful, continued emphasis should be placed on this sector if the regional food deficit is to be reduced substantially. Agriculture is also important not only as the main activity in the ldc's, but as an input to processing and the food industry, an area which is important for the development especially of the ldc's.

These recommendations are very general and are not intended as specific detailed policy, but should be viewed as the possible directions or main areas of emphasis that may help in the future development of the Caribbean region.

Section 6.5: Conclusions

In this chapter we were interested in two basic questions. First, based on the trade flow model, expenditure share and import elasticities, how successful was Carifta/Caricom and what were the effects on the region as revealed through trade flows. Second, based on the evaluation of Carifta/Caricom and the results of chapter five to what extent could the trade flow model isolate the effects of economic integration on trade flows. The second question is addressed in the concluding chapter.

The evaluation of Carifta/Caricom was based on a limited number of indicators associated with trade flows and so only certain aspects of integration mainly associated with the common market, could be commented on.

The effects reported in section 6.2 can be largely attributed to the liberalisation of regional trade and the common external tariff. We also have to include here the effects of the structure of protection as defined by escalating tariffs and the exemptions list.

Although for the region at the aggregate level there was evidence to suggest gross trade creation, this must be qualified as the trend was evident prior to the formation of Carifta in 1968, and may in part be attributed to past Commonwealth and regional associations. Although there was an increase in total regional trade associated with the free trade area, this was not as marked as in the EEC or the CACM for example.

Two of the main features of the region have been the polarisation of most of the activity in the MDC's at the expense of the ldc's, and the concentration of trade on certain members and in particular the large trade flow between Trinidad-Tobago and Guyana. By category of product

three trends can be observed: (i) the decline in food production and trade; (ii) the increasing importance of manufactured products in regional trade; and (iii) the importance of the regional market for manufactured exports.

Although the free trade area enhanced the opportunities for development of manufacturing industry based on the regional market, a greater role can be attributed to the incentives given to manufacturing, and to the structure of effective protection that has been developed. In particular, the more processed imports from outside of the region face the highest tariff barriers with very low rates (6 - 8%) applying to capital goods and raw materials. This is further affected by the Exemptions List which allows duty exemptions on imported inputs. As a consequence the structure of effective protection provides excessive protection to final products while discouraging backward linkages.

The majority of inputs are imported from outside of the West Indies with producer goods accounting 'for over 70% of total imports, with less than 10% imported from within Caricom'. (11) The types of industries encouraged have therefore been consumer and assembly type activities. Expansion and growth of this type of production will rapidly be limited by the size of the regional market, and the stagnating and declining shares of intra trade in total trade provides some evidence that these limits have been reached.

By 1973 close to 50% of manufacturing output went to the regional market, and in certain categories over 80% of manufactured exports were destined for the region. Although these exports do not represent the majority of aggregate exports, in some cases, notably Barbados, this trade is important. Moreover as manufacturing exports do depend to a large degree on the regional market, any restrictions imposed by the size of the market will affect severly the growth of industry in the region. Although the regional

11. Ranis (1982) p.6.

market may have provided the initial impetus to industry, exports to outside of the region are likely to be very important for the future growth of industry, and this trade will depend on competitiveness in world markets.

The effects of economic integration associated with the free trade area and customs union have certainly provided a basis for industrialisation. However this has generally been restricted to final consumer goods, the structure of effective protection inhibiting backward linkages. This in turn has required large imports of most inputs to industry and created an unchanged or increased dependence of the region on the industrial countries.

The decline in the importance of foodstuffs in aggregate regional trade is probably associated more with national neglect of the sector and with the growing importance of industry than with regional integration itself. However, there are also indications that more food is being produced for domestic consumption in some members and in the light of the regional food plan greater trade in this category would be expected.

In terms of the success of objectives and instruments, (section 6.3) the free trade area has in general been successfully implemented, although in the late 1970's domestic economic problems as well as the effects of the international recession resulted in some temporary erosion of the principle of free trade.

On the other hand the common protective policy (common external tariff and the regime for regional quantitative restrictions) is still not totally implemented. By the end of 1977 almost all of the CET rates had been implemented among the MDC's. However, the differences between the national quota regulations as well as those of the exemptions list provisions have created a regional trade regime that provides little common protection of inputs or output. Certainly throughout the 1970's the common protective regime has not achieved the application required for it to be considered a common policy.

Although substantial technical work has been done on

the common economic policies for industry, the programme of industrial development has not made notable progress. Overall the productive sectors of the members have not been integrated to the extent that would be required if the area was to support a major industrial base. However, cooperation in agriculture which has a longer tradition within the region has by comparison been relatively successful.

Finally, based on this evaluation, and the problems observed in other third world regional groupings we were able to make several general policy recommendations.

(i) Although the free trade area has generally been implemented, removal of tariff should be immediate or automatic to ensure that timetables are observed.

(ii) The common protective policy currently favours final products and discourages backward linkages. It is suggested that the common protective policy be ammended in such a way as to encourage the local production of required intermediate inputs. Higher rates of common external tariff or removal from the exemptions list would be one means of encouraging the production of selected inputs.

(iii) The common economic policies associated with the development of industry has not been particularly successful, and we argue for a regional plan for industry in which national plans are integrated. The objective is to create linkages between processes and sectors with individual plants being allocated by regional comparative advantage, and with a view to a fairer distribution of the benefits of industrialisation.

(iv) Because of its small size the regional market will restrict the growth of manufacturing in particular. It will be necessary in the future to place greater emphasis on expanding non-primary categories of export into the international market.

(v) Although agriculture has been reasonably successful, continued emphasis on this sector will be required if the regional food deficit is to be reduced substantially.

Based on the trade flow analysis, Carifta/Caricom may be considered a success to the extent that the free trade area was implemented and regional trade flows increased. However, Carifta/Caricom has failed to achieve the

objectives of positive integration associated with region-wide planning of industry and agriculture and the development of backward and sectoral linkages. In a review by the Caricom Council in 1980, it was suggested that lack of progress was attributable to an absence of understanding as to what actions were required to implement integration, and not to weaknesses in the concept of integration itself. To an extent part of the problem is a lack of dynamism in the integration process and underlines the importance of non-economic factors in determining the success of regional integration.

In chapter seven we draw together the conclusions of the thesis, and in particular we discuss the extent to which the analysis of trade flows can isolate the effects of economic integration on trade flows.

CHAPTER SEVEN

Main Conclusions and Areas for Improvement

Section 7.1: Introduction

The purpose of chapter seven is to draw together the main points of this study based on the preceding analysis. One of the principle objectives of the study has been to evaluate the extent to which the trade flow model is capable of isolating the effects of economic integration on trade flows. We suggested in chapter four that evaluation of integration should not be based on one partial measure, but should be conducted in a general framework consisting of a set of partial methods, that together provide a vector of attributes associated with the effects of integration. This allows not only a broader evaluation, but should also facilitate comparisons between regional groupings. The analysis of trade flows, and of the trade flow model in particular should be viewed as just one component of this broader evaluation framework and as such the evaluation of Carifta/Caricom in chapter six must also be seen as partial.

Based on the results of chapter five and the evaluation in chapter six we will discuss in section 7.3 the extent to which the analysis of trade flows was able to isolate the effects of economic integration on trade flows, the main problems and defects associated with the trade flow model and to suggest possible solutions to these problems.

First, in section 7.2 we will outline the main points and conclusions associated with the role and evaluation of economic integration in the third world.

Section 7.2: Summary of Main Conclusions

Practically every independent nation in the world has been involved in regional groupings in one form or another. In particular, in the third world, economic integration

can be viewed as a necessary complement to political independence. Without economic independence, political independence is restricted, and economic integration is one approach to overcoming the constraints and problems of underdevelopment associated with small economic size, a narrow resource base and limited range of economic activity. Many, if not all of the integration groupings formed in the third world have faced severe problems, and success has generally been only moderate. The schemes have been ambitious and at least in terms of their stated objectives have not been simple free trade areas or customs unions. In many cases there are mechanisms to ensure a fair distribution of the costs and benefits of integration, to give special status to the less developed members and to encourage industry and agriculture with the overall aim of 'harmonious and balanced developement'. One of the major problems however has been that in many schemes the process has lost its earlier dynamism. In most cases some form of free trade area has been established, and in some a common external tariff. There have however been so many loopholes or restrictions, as well as structures of effective protection that discourage linkages between sectors and industries, that for all their intentions, economic integration has in many cases regressed to what is no more than a form of free trade area, and certainly not what was originally envisaged. However, although integration has apparently not produced all the expected results, much of the failure has been a problem of implementation and is not a criticism of the concept of economic integration as such.

However, it has been suggested that models based on the industrial economies need not necessarily be applicable or relevant to the problems of third world development. At the same time it is also realised that models applying to one country or area of the third world at large. In the example of models of economic integration the same is true when referring to the regional schemes in the third world where 'practically all these schemes were

attempting, with traditional, very committed means, borrowed mostly from the trade experiences of the advanced countries, to solve non-traditional problems of economic non-viability and social backwardness in the South. (1)

Based on the aspirations and problems of third world economic integration we have to question the relevance of the traditional theory of economic integration to the third world, and in particular to establish the role of economic integration in the third world and the extent to which the traditional theory could provide a useful basis for analysis of third world integration. Establishing a theory relevant to the particular case and problems being considered is important, as methods of evaluating the effects of integration and the actual effects we look for will be derived from theory.

However, the preconditions existing in the third world do not generally correspond with those expected in the model and required for successful integration. Furthermore, the assumptions made effectively discounted the basic problems that concern the third world, and the theory did not address the questions of how the process of integration would dynamically change the structural conditions of production and technology, the composition of investments and the capacity to absorb externalities.

We suggested that economic integration should be viewed in terms of a framework for development policies at the regional level. Economic integration provides an alternative to nationally based import substitution or export-led strategies and helps to overcome some of the basic constraints facing development by providing a framework for the development of an interconnected regionwide industrial base. In the short run economic integration creates the preconditions that allow the exploitation of economies of scale and dynamic effects associated with industrialisation. Economic integration in the third world should not be constrained to 'negative

1. Wionezek (1978)

integration', nor should it be viewed as an alternative to other development policies, rather it should be approached as a catalyst that creates conditions conducive to regional development.

As the evaluation of integration using partial measures such as the effects on trade, the degree of integration or the distribution of costs and benefits - does not provide full coverage of the effects of integration in the third world, we outlined a tentative framework for evaluation based on the role of integration in the third world. Basically this approach consists of an extended list of partial methods covering the main effects of integration. In particular we suggest analysis of trade patterns, of the growth of industry associated with integration, of employment and income, and of price and cost changes. However the contents of this framework are not exhaustive and should also include aspects of social and political integration. The outcome of this approach would be a vector of attributes that could be used as the basis of a full evaluation of integration.

In this study we concentrated on one particular aspect of the framework of evaluation based on the trade flow model. One of the objectives of the thesis is to examine the extent to which the trade flow model could isolate the effects of integration on trade flows. This is based on an evaluation of the effects of integration in the Commonwealth Caribbean. In section 7.3 we discuss the extent to which the analysis of trade flows and in particular the trade flow model can be used in the context of evaluation.

Section 7.3: The Analysis of Trade Flows and the Problems Associated with the Trade Flow Model

The trade flow model has certain advantages over other methods of isolating the effects of economic integration on trade flows that make it an important component in a broader evaluation. First, and perhaps the most important is that the trade flow model allows a direct measurement of

the impact of integration on a region's trade flows by incorporating a dummy variable to represent changes in regional trade flows. In general the other less sophisticated approaches rely on the 'residual' approach that basically attributes to integration any changes in income elasticities of trade between pre and post integration periods. These methods therefore, do not directly allow for any other autonomous changes that may be unassociated with integration. Second, the trade flow model by including income, population and distance as independent determinants of the size of trade flows, to an extent take into account some of the possible effects on trade flows that are not associated with integration.

In chapter five we attempted to derive more information on the integration effects by estimating the trade flow model on various subsamples of the available data. These included the imports and exports of Carifta/ Caricom, intra and extra regional trade flows, as well as an aggregate model and equations for the individual MDC's. Although each of the equations on their own were restricted in the information that could be derived, together they provided a much broader picture of the effects of integration on the region than the aggregate equation alone.

The aggregate equation (equation one) was restricted as the dummy variable for the integration effect did not differentiate between the effects of integration after 1967 and prior trade expanding effects. As a result we had to speculate whether this was a problem of the data, the inapplicability of the model or prior trade expanding effects. However, the results of the individual country equations identified Guyana as a likely source of this problem, with the three other MDC's showing clear indications of trade expanding effects associated with integration.

Disaggregation by MDC exports and imports (equations four and five) revealed the greater impact of the region on

the export side, and this result was supported by data (see section 6.2) that indicated the importance of the regional market for exports of regionally produced manufactured goods.

The individual country equations (equations 9 - 12) allowed for the diversity in the timing and magnitude of the integration effect across countries, and provides the clearest indication of integration effects on regional trade. In these equations if we exclude Guyana, the dummy variable was insignificant prior to integration, increasing in value thereafter. These results indicated the general timing of the initial integration effects as well as their impact over time on the individual countries.

Information on the progress of integration was also derived from the elasticities of the independent variables determining trade flows, in particular the proxy for resistance to trade - the distance variable. It was observed that first, this elasticity was greater for intra regional trade (equation two) than for extra regional trade (equation three) reflecting the generally less developed transport and marketing infrastructure within the region. Second, the elasticity of distance for intra regional trade decreased over the sample time period indicating both the improvements in the regional infrastructure, as well as the broader range of goods that were included in regional trade.

The adjacent year regression equation (equation seven) was an attempt to measure directly the effects of integration on both intra and extra regional trade. This equation was not totally successful as the dummy variable for extra regional trade was not significant. However, this could be an indication of the small net effect of economic integration on extra regional trade which is plausible given the dependence of the MDC's on the industrialised countries for inputs to their import substituting industries, and that the composition of extra regional trade was largely unchanged. However, this type

of equation although relatively undeveloped here, could be an important component in the direct measurement of integration effects on trade.

Overall, although there are obvious areas for improvement which are discussed below, the trade flow model was useful in isolating the effects of economic integration on trade. It was able to indicate the presence of gross trade creation, especially at the individual MDC level, it indicated the magnitude of effects on the individual MDC's and also provided further indications of integration effects through changes in the distance variable.

However, the extent to which the trade flow model was not able to isolate the effects of economic integration are also important especially as an indication of the areas in which improvement and changes are needed. This exercise has also demonstrated the importance of regarding partial measures as only one part of an overall evaluation and the need for other complementary measures in every area of evaluation. It was found that the trade flow model had to be supported by the expenditure share results and the changes in the income elasticity of import demand. Using these two other less sophisticated methods, we were able to get an indication of the effects of economic integration on total, intra and extra regional trade, and to disaggregate the trade flows by SITC catergories thereby allowing an analysis of the changes in the composition of trade associated with integration. It was found that even the simplest methods using the percentage share of regional in total trade contributed to the analysis.

Estimating the trade flow model for Carifta/Caricom allowed us to pinpoint various defects and problems of the model. Although some of these problems cannot be solved, others can be, and we now discuss three areas that could be improved on.

First, the standard trade flow model was only able to account for either changes in intra or extra regional trade.

In general the model is used to estimate changes in intra regional trade - gross trade creation. We attempted to solve this problem using adjacent year regressions (equation seven) which allowed direct measurement of integration effects on both intra and extra regional trade. This method substantially improves the extent to which the trade flow model isolated the effects of integration by allowing direct estimates of gross trade creation, trade creation and trade diversion. From these results an index of integration effects could be constructed, which would provide additional information on the relative impact and time profile of integration effects. Furthermore, it was also found that the adjacent year regressions produced more stable elasticities of the independent variables and should be used in preference to the standard aggregated form of the equation.

Second, the model was estimated only by aggregate trade and did not differentiate between individual product categories. As was seen in the income elasticity results, disaggregation by SITC categories provided essential information on the types of activity that were expanding regionally and extra regionally. This approach gives a more extensive indication of the progress of integration and whether it is contributing to overall development objectives. Ideally the trade flow model should also be disaggregated by SITC category. However this would probably require additional or a completely new set of independent variables to determine the trade flows, as income and population are unlikely to be the most appropriate. This approach would also run into severe data restrictions, as although there is data available for trade flows disaggregated by SITC categories, we may be limited by country coverage and by the length of the data time series.

Third, the resistance to trade variable (proxied by geographic distance) is important both in determining trade flows and in reflecting possible integration effects. However, not all of the aspects of resistance to trade are

adaquately reflected in the distance proxy and this variable should be disaggregated into a set of proxy variables that would include those that are most important for any particular regional grouping.

Based on this study we can suggest two areas for future research. In particular the framework for evaluation outlined in chapter four needs to be refined and developed in more detail. There are many other areas of integration that should be included, in particular those associated with political and social integration the benefits of increased bargaining power as a region, of joint research and development, of monetary zones and of fiscal harmonisation. Furthermore, the links between the various partial measures and how they would be incorporated in a full evaluation has to be developed. Finally in the case of Carifta/Caricom we only attempted an evaluation based on one component of the evaluation of the evaluation framework. The Caribbean Community would provide an interesting example in which the other components of the evaluation framework could be developed.

APPENDIX A

Economic Background of Carifta/Caricom Members

A The More Developed Countries

Barbados

Barbados, geographically part of the Lesser Antilles, is the most easterly of the Caribbean nations, lying 200 miles northeast of Trinidad-Tobago. Population density is among the world's highest at over 1500 per square mile, and virtually the entire island (area of 166 square miles) is inhabited, with few sparsely populated or uninhabited areas. Of the population of 252,000 (1982), 92% are of negro descent.

Barbados has been under the British Crown since 1624. Its House of Assembly, which began meeting in 1639 is the third oldest legislative body in the Western Hemisphere. Historically, the economy was dominated by the growing and processing of sugar into rum, molasses and syrup. Until slavery was abolished in 1834, the plantations were worked by African slaves, who following emancipation became rent paying tenants as little farmland remained unclaimed and there were few alternative means of subsistence. The tenant, for the most part paid their rents by working for the owner's sugar related enterprises, thus ensuring the continuing importance of sugar. Internal self-government was attained in 1961 and full independence in 1966.

Of the total land area nearly 60% is cropland. The majority of the land is intensively cultivated, with sugar cane accounting for over half the acreage. In recent decades diversification has reduced the importance of sugar and its related activities. The size of the sugar crop has diminished considerably since the late 1960's with sugar exports declining from over 65% of total exports in 1960 to 12% in 1981. This has been the result of labour shortages during cultivation and harvesting, adverse weather conditions, depressed world prices, increasing production costs, and in

part because the land has been converted to other uses.

In an effort to reduce food imports production of other farm commodities has been encouraged. All farmers are now required to plant at least 12% of their arable land with some foodcrops. Bananas have been introduced on a limited scale, and sea-island cotton once grown extensively has been reintroduced. Livestock are mainly owned by small holders, although there are a few large dairies. There are no natural forests, and there is a relatively small fishing industry.

Overall agriculture has declined in importance since the 1960's when it accounted for 26% of employment and 26% of output. In 1970 the sector accounted for 16% of employment and 14.7% of output, and by 1980 only 10.7% of output.

Economic policy has been based on the diversification of a sugar economy into non-agricultural activities. The government has provided incentives to firms establishing export or manufacturing industries on the island, including ten year tax holidays, guaranteed profit repatriation, exemption from import duties on materials needed in manufacturing, as well as the construction of industrial parks. Consequently, Barbados has become a relatively inexpensive and convenient location for light manufacturing and assembly operations for the North American market.

The manufacturing sector now includes food processing, textiles, furniture, local handicrafts, electronic components as well as chemicals. Some construction related minerals are available and the government has launched cement projects in conjunction with both Guyana and Trinidad-Tobago.

The share of manufacturing in GDP has risen from 7.9% in 1960 to 12.4% in 1980, and employed 14.6% of the labour force in 1970.

Reserves of petroleum and natural gas have been discovered, and by 1981 petroleum was being extracted at the rate of 700 barrels per day, with the prospect of further offshore fields. Output of petroleum products in Barbados satisfies around 30% of total national requirements, and the island

is self-sufficient in natural gas, which is produced in conjunction with crude oil.

As in the rest of the Caribbean, tourism is an important source of foreign exchange. Since 1968 it has generated more foreign exchange than sugar, accounting for 42% of total receipts in 1979, compared with 30% in 1977-78.

Barbados has recently joined a number of Caribbean states in encouraging offshore banking, although the benefits of this may be reduced as the US Federal Reserve Board has agreed to allow US banks to provide many of the same services currently offered by such traditional offshore havens as the Bahamas.

The Barbadian economy is one of the most open in the world, until 1968 exports plus imports amounting to over 100% of GDP. Between 1960 and 1968 exports share of GDP was above 30%, thereafter the share lay closer to 20%. Imports on the other hand have usually been greater than 60% of GDP, reaching a peak of 77.4% in 1968.

Traditionally Barbados has run a trade deficit, although in many years this gap has been met by invisible earnings, principally from tourist receipts. Up to the mid-1970's sugar was the principal export, although its share in exports fell from 65.5% in 1960 to 12.2% in 1981. Manufactured exports are now of greater importance accounting for 27.5% of total exports in 1973. Major imports include foodstuffs, machinery, motor vehicles, lumber and fuels. Although petroleum imports have grown from 1.9% of total imports in 1966 to 5% in 1979, the discovery of local energy supplies means that petroleum imports are less of a problem for Barbados than for many other developing nations.

The generally positive economic performance of Barbados over the last twenty years can be attributed to government policies that have fostered development. Although almost all the sectors had positive average annual growth rates over the period 1960 to 1980, agriculture declined on average by -2.5% annually, during the 1970's. After independence, sugar production fell steadily. In the late 1970's depressed world prices and increasing production

costs contributed to the industry's decline, although in 1979 and 1980 there was some recovery with improved yields supported by increases in world prices.

Rapid expansion in the tourism and manufacturing sectors brought about considerable growth in real GDP, which averaged 4.3% per annum between 1976 and 1980. Tourism was the most dynamic sector, growing at rates of 17% a year. However, in 1981, for the first time since 1976, real GDP declined by an estimated 3.1% compared with an average rate of increase of 4.5% during 1977-80. The main causes for this decline included rain handicapping agriculture, a reduction in petroleum output, softer sugar prices and the international recession.

The rate of inflation rose to a maximum of 38.96% in 1974 during the first oil crisis and subsequently fell to an average 7.6% in 1976 - 1978. In recent years inflation has once again been accelerating, averaging 14.5% in 1979-81, fuelled by higher import prices, price increases within the construction sector, shortages of fresh vegetables and wage increases in the public sector. Barbados has experienced high unemployment rates, but this has been reduced from 16% to 12% over 1979-80.

Guyana

Guyana (formerly British Guiana) lies on the northern Atlantic coast of South America, with Venezuela to the west, Suriname to the east and Brazil to the south and southwest. Guyana is the largest of the Caricom members with an area of 83,000 square miles and a population of 870,000 (1982) concentrated along the narrow coastal belt. Guyana is divided into three major geographical zones: a coastal plain 10 - 40 miles wide, a forest zone and a grass covered savanna.

Guyana was first settled by the Dutch in 1616, being placed under the direction of the West Indian Company of the Netherlands in 1621. The British began migrating to the colony in large numbers and by 1760 constituted a

majority of the population of Demerara. The British occupied the colony in 1796, again in 1803 and finally gained formal possession in 1814. African slaves and later East Indian labourers were imported to work on sugar plantations, most of the Indians arriving between 1844 and 1917 under the indenture system. Currently 50% of the population is of East Indian origin (mainly associated with agriculture),31% African (principally urban dwelling), 12% mixed blood and 4% indigenous indians. Guyana was granted full self-government in 1961, independence in 1966 and declared itself a Cooperative Republic in 1970.

Only 15% of Guyana is classified as agricultural land, with the narrow coastal belt the only area suitable for intensive farming. The economy is based primarily on agriculture, with sugar and rice being the principle crops, although the sugar plantations also produce bananas and the rice farmers coconuts, coffee, cocoa and citrus fruit. Other crops include groundnuts, oil palms and a variety of vegetables.

Traditional smallholdings and modern plantations coexist in this sector, but with differing scales of efficiency; mechanisation and use of fertilisers being limited to plantations. Rice production is highly mechanised but farmed in uneconomic units of an average of 11 acres.

By 1979, Guyana had become self-sufficient in sugar, rice, vegetables, fish, meat, poultry and fruit, although output of key commodities fluctuates widely, depending on weather and availability of fertiliser, machinery and spare parts.

Livestock includes cattle, pigs, sheep and goats, but these have been decreasing in numbers because of a shortage of pasture and reduced demand for draught animals. Guyana's coastal and inland waters are rich in a wide variety of fish especially shrimps which are exported.

Over 80% of Guyana is covered by tropical forest with an estimated annual volume of marketable timber of one million cubic metres of which 25% is accessible. Forestry

is expected to become an increasingly significant industry in the 1980's.

Although one of the chief aims of the development plans (1966-72 and 1973-76) was a reduction in the nation's dependence on sugar, bauxite and rice, there are agricultural development projects aimed at expanding rice production, with three irrigation and land recovery projects. Guyana has an important role as a major food producer in Caricom, and further investment in this sector is central to the reduction of the region's food import bill.

The agricultural sector employs about 30% of the labour force, but its contribution to GDP has fallen from 24% in 1960 to 17.2% in 1980. Sugar alone contributed 31% of total exports in 1980 (a fall from 47.4% in 1960), and rice contributed a further 9% in export earnings in 1980.

Until 1970, Guyana was a free-market economy with a dominant private sector. In that year the country was proclaimed a cooperative republic and the government embarked on a policy of nationalisation and central planning. By 1975 nationalisation of the bauxite mining industry was completed and a similar program affecting the sugar industry was virtually completed by 1976. By the end of the 1970's 80% of the country's productive capacity was within the public sector with cooperatives accounting for another 10%.

The largest state enterprises are involved in the two most productive sectors of the economy - agriculture and mining. The Guyana Sugar Corporation Ltd. (Guysuco) was established following the nationalisation of the British based Demerara Sugar Company and Booker McConnell estates in 1975 and 1976. The Guyana Mining Enterprises Ltd. (Guymine) was founded in 1977. Both Guysuco and Guymine maintain a monopoly on foreign sales as does the Guyana Rice Board (established in 1973).

The mining and manufacturing sector consists mainly of the bauxite - alumina industry, although gold and industrial diamonds have been mined since the 1880's. Guyana is the fifth largest producer of bauxite in the world,accounting for over 4% of world production, and has a near monopoly

in calcined bauxite used in the manufacture of refractory bricks for the steel industry. Total bauxite and alumina exports consistently account for 40 - 50% of foreign exchange earnings, while mining and manufacturing together employ about 30% of the work force. The contribution of mining to GDP has fallen from 20.3% in 1970 to 11.4% in 1980, while manufacturing overall has increased its share from 13.3% in 1960 to 18% in 1980.

However, manufacturing, (excluding sugar and rice processing) most of which is conducted by small private firms, remains undeveloped, producing 8 - 9% of GDP in 1976-80. The main products are processed food, clothing, rum and beverages, assembled components and metal manfactures. Recent additions to industry include a textile mill financed by China, a glass factory and a bicycle plant.

In general the economic performance is sensitive to international economic conditions, which determine demand and prices for the country's main products. Industrial development depends on the expansion of energy sources and a 750MW hydro-electric project scheduled for completion in 1985 should make possible the construction of a local aluminium smelter.

Guyana's economy is highly dependent on foreign trade as shown by the ratio of exports plus imports to GDP, which rose from between 90 - 100% (1960-73) to a maximum of 146% in 1976 but subsequently fell to 108% by 1982. Exports share of GDP rose from 43.4% in 1960 to a high of 72.2% in 1975 and has since fallen. For imports this share has risen from 50.4% in 1960 to 83% in 1976 and fallen to 58.8% in 1982.

Three commodities, bauxite-alumina, sugar and rice, together have accounted for over 80% of foreign exchange earnings since before independence. Since 1965 bauxite and alumina have dominated export earnings (on average over 40%) and sugar has taken second position as an export earner. Sugar's share of export earnings fell from over 47% in 1960 to 36% in 1982. Rice exports have also declined in importance (12.1% in 1960) but still provide around 8% of export earnings.

Steadily increasing export earnings in the key sectors have tended to mask diminishing output. Although foreign exchange earnings from sugar grew each year between 1972 and 1980 (apart from a marginal downturn in 1978) export volume has fluctuated. Collaterally output of bauxite and alumina which peaked in 1970 has stagnated since a drop-off of 27% in 1976, even though earnings have risen. At the same time higher export earnings have been more than offset by a rising import bill.

Most trade is still conducted with the developed west - USA, Canada, the EEC, but Caricom members now account for a significant proportion, with Trinidad-Tobago being the major source of oil. Following independence, Guyana fostered trade relations with China and Eastern Europe which in 1975 collectively accounted for about 10% of exports; however, this trade has subsequently declined. A trade agreement with Cuba was concluded in 1981.

During the 1960's Guyana experienced an average annual rate of GDP growth of 3.4%, however, the economy has been in a crisis since the mid-1970's. Despite its considerable dependence on imported petroleum the economy performed reasonably well during 1974-76, mainly because of high sugar prices, which in turn supported a large expansion in expenditure, particularly in the public sector. However, a sharp decline in international sugar prices, coupled with a decline in sugar production plunged the economy into a recession in 1977, and it has been on a downward trend ever since. Real GDP fell by a cumulative 4.8% during 1977-81, notwithstanding a slight recovery in 1980-81. Sectoral output has in general been rather volatile with the exception of the miscellaneous manufacturing subsector (mainly food and beverages), which showed positive growth rates over the entire period.

The recession that began in 1977 was accompanied by a severe weakening of the balance of payments as international reserves were depleted and external obligations grew rapidly. This weakness continued in the following years, and by 1981 the current account deficit was the equivalent of 35% of GDP.

Following international price trends, domestic inflation decelerated from 20% in 1978 to an average of 16% in 1979-80, but in contrast with the direction of international price movements it accelerated again in 1981 to 25%.

Jamaica

Jamaica is a mountainous island located 90 miles south of Cuba. The third largest island in the Caribbean (4,411 square miles) it is the largest and most populous of the independent Commonwealth islands in the Caribbean. About 77% of the population of 2.3 million (1982) is of African descent, and another 15% of mixed Afro-European heritage.

Jamaica was discovered by Columbus in 1494 and subsequently settled by the Spanish. The Spanish were expelled by the British and the island formally ceded to Britain in 1670. A successful plantation economy based on African slave labour was developed, but the abolition of the slave trade (1807) and of slavery (1834) as wellas theremoval of tariff protection for Jamaican produce in Britain destroyed the basis of the plantation economy. A crown colony government was established in 1866 and the administration and the economy gradually rebuilt. Jamaica achieved a measure of internal self government in 1944 and after her withdrawal from the Federation of the West Indies, gained independence in 1962.

Jamaica was historically dependent on agriculture with sugarcane as the leading crop, although after 1870 bananas became predominant. After World War Two the granting of a preferential market by the UK helped sugar to re-emerge as the leading agricultural export. However, the development of a modern economy can be traced to the early 1950's with the discovery of extensive bauxite reserves.

Of Jamaica's total land area, 21% is arable, 23% meadows and pastures and 19% forests. The island also has considerable resources of freshwater and marine fish. Jamaican agriculture is divided into a modern sector, consisting of plantations, now in decline, and the traditional

sector, consisting of smallholders. The main crops are sugarcane, citrus fruit, bananas, pimento, coconuts, coffee, cocoa and tobacco, - which are exported, and yams, potatoes, maize, vegetables, plantains and pumpkins - primarily for domestic consumption.

Both sugar and banana exports, the two most important export crops, declined substantially during the 1970's. Sugar exports as a share of total exports declined from 23.8% in 1960 to 10.3% in 1970 and to 5.7% in 1980. Other smaller export crops such as coffee and citrus fruit also declined during the 1970's. The sources of this decline include: a shift of production into products for domestic consumption; the breakup of large estates into less efficient smallholdings and cooperative farms; a variety of crop diseases affecting sugar, coffee and coconut production; and a shortage of imported agricultural inputs such as fertilisers, created by the scarcity of hard currency. However, domestic food crops have been performing relatively well.

In 1972 the government introduced a program called 'Growing and reaping our wealth', (GROW), in an effort to increase production and redistribute land. But agricultural output showed an average yearly gain of only 1.4% during the 1970's and its share of GDP fell from 11% in 1960 to 8.7% in 1980.

During the 1960's and early 1970's economic development policy was aimed at the expansion of the bauxite-alumina industry and import substitution of consumer durables. During the 1970's manufacturing developed from the processing of a few agricultural products into the largest economic sector contributing 14.9% of GDP in 1980 and approximately the same in employment. Industry has diversified and now includes a wide range of goods: clothing, footwear, textiles, processed foods and beverages, tobacco, furniture, sporting equipment, glass, paper and paperboard, paints, cement, steel, machinery and tools, fertilisers and refined petroleum products. Several laws have been enacted to encourage and facilitate industrial

development, including tax relief and liberal profit and capital repatriation provisions.

Since the mid-1970's though, severe foreign exchange shortages, partly associated with the oil price rises in 1973/74 have caused cutbacks and the closing of many factories unable to purchase imported raw materials, equipment and spare parts on which manufacturing in Jamaica relies.

The aluminium industry is critical to economic growth, foreign exchange earnings and government revenues. By the early 1970's with reserves of 500-600 million tons of bauxite, Jamaica was second only to Australia in world production of bauxite (in 1978 production of bauxite was approximately 20% of total world output), which along with its principal derivative alumina accounted for over 75% of total exports in 1980 as compared with 48.6% in 1960.

However, this mineral-led development strategy came under a severe strain after the 1973-74 oil price rises as Jamaica depends on imported energy as a major component of total costs in the aluminium industry.

In 1974 the government increased the taxes on bauxite and alumina, imposed controls on output and profits, and entered into negotiations with the companies to achieve eventual nationalisation. This created friction and pushed up the cost of bauxite (which had been among the lowest in the world). This combined with the world recession, a slowdown in demand and labour disputes contributed to an almost 3.5 million ton annual drop in output in the late 1970's.

Since then to increase bauxite and alumina output the government has been actively seeking to increase investment in new and expanded mining and producing facilities. Although the output of bauxite has failed to regain pre-1975 levels, high world market prices have helped to improve earnings since 1977.

Tourism is Jamaica's second largest foreign exchange earner although bad publicity, civil unrest and rising crime caused a recession in the industry during the 1970's.

In terms of the share of exports and imports in GDP, Jamaica has become an increasingly more open economy. Exports as a percentage of GDP have risen from 23.9% in 1960 to 36.1% in 1980, and imports from 32.7% in 1960 to 43.9% in 1980. The combined share of exports and imports has risen from 50-60% over the period 1960-1968, to 60-70% over 1968-1978 and 70-80+% over 1978-1982.

Three commodities dominate both the Jamaican economy and her exports - sugar, bauxite and alumina. Sugar exports as a share of total exports has declined in importance from a high of 31% in 1963 to 5.7% in 1980. Bauxite's share in exports in 1960 stood at 19.2%,but has gradually declined to 20.6% in 1980 from a peak of 43.7% in 1967. Alumina on the other hand increased its share from 29.4% in 1960 to 60.4% in 1981. Together alumina and bauxite have dominated Jamaican exports, with alumina increasing as bauxite declined, in combination rising from 48.6% in 1960 to 78.1% in 1981.

Jamaica relies totally on imported fuels, industry depending to a large degree on imports of raw materials and intermediate goods. As such, foreign exchange constraints play an important role in the development of the industrial sector and any fluctuations in bauxite-alumina earnings (the main foreign exchange earner) will affect the rest of the economy.

Until 1973 fuel imports were generally less than 10% of total imports, but with the first oil price increase doubled to 20% in 1974 and grew to 32.7% by 1980. Other major imports include food, manufactures and transport and machinery. Jamaica's main trading partners are the USA, UK and Canada.

The Jamaican economy after recording an average annual real growth rate of around 5% during the 1960's, experienced aseries of disruptions during the 1970's. Between 1970 and 1980 GDP declined at an average annual rate of almost 1%, manufacturing fell by 2.3% per annum and construction by 8.4% per annum.

The inauguration of the Manley government in 1972 quickly led to a rise in government expenditure, much of

which was financed by borrowing from foreign commercial banks. When foreign credit diminished in 1976, the country's international reserves were drawn down to finance trade and budget deficits, while wage increases and overall higher production costs made sugar and bananas as well as bauxite and alumina less marketable. Rising oil prices after 1973 and the resultant world depression aggravated the problem, as did growing uncertainty on the part of private enterprise. Capital flight was accompanied by emigration of businessmen, professionals and technical personnel.

In 1976 the IMF agreed to provide 65 million US dollars to support oil imports as well as to cover export shortfalls. In August 1977 a two-year IMF stand-by credit of 75 million US dollars was arranged, but pressure from Jamaican unions and higher public sector wages contributed to the government's inability to implement a program of fiscal adjustments, with the IMF therefore interrupting Jamaica's drawing rights in December. During this two year period the country's import bill fell by over 23%, but the cutbacks precipitated a drop in total output as capital equipment, spare parts, and such key inputs as raw materials became scarce. In 1978, to reverse declining investment and to restimulate growth, the IMF approved a new three year credit of 280 million US dollars in support of a government program that included a series of currency devaluations, loosened price controls, wage moderation and greater foreign assistance at concessional terms to reduce the need for domestic credit creation. Once again, several major components of the plan proved unattainable, and in mid-1979 the IMF increased its commitment for the remaining two years of the extended arrangement to 475 million US dollars. Emphasis was placed on expanding output of export related industries, which required additional imports and thus acceptance of a continuing trade deficit.

Various factors worked against the success of the 1979 program. These included the second round of OPEC oil price increases, rising international interest rates, midyear floods that damaged agricultural output, lower than

anticipated revenues, and labour strife that affected the bauxite-alumina industry, public utilities, transport and even the central bank. Domestic credit was allowed to expand to finance the budget deficit, which in turn generated inflation of 29% for the year. Meanwhile, production in key sectors continued to decline. Discussions were reopened with the IMF in September, but in February 1980 debate over the terms for further credit resulted in the Manley administration's decision to call an early election In March, Jamaica broke off talks with the IMF.

On election of Edward Seaga links were renewed with the IMF and a three year loan of 698 million US dollars from June 1981 was negotiated. Seaga's three year economic recovery plan called for a considerable injection of foreign investment into the private sector. Government policy had not succeeded in stemming the decline in export growth, but a major achievement has been the reduction of inflation from 29% in 1980 to around 5% in 1982. The unemployment rate, however, remains at over 25% of the labour force.

Trinidad-Tobago

The islands of Trinidad and Tobago are located off the northeast coast of Venezuela, at the southern extremity of the Lesser Antilles. The islands cover an area of 1980 square miles, with Trinidad the larger accounting for nearly 95% of the country's area and population of 1.2 million in 1982.

Although Trinidad was discovered by Columbus in 1498, the Spanish did not appoint a governor until 1552. In 1797 a British expedition captured the island, which was ceded formally to the UK in 1820 by the Treaty of Amiens. Tobago became a crown colony in 1877 and was amalgamated with Trinidad in 1888. Following participation in the short lived, British sponsored Federation of the West Indies (1958-1962), Trinidad-Tobago was granted full independence within the Commonwealth in 1962 and adopted a republican constitution in 1976.

Trinidadian society is ethnically diverse, with approximately 43% of the population descended from African slaves, and a further 40%, descendents of East Indian indentured labourers imported during the nineteenth century

Until the discovery of petroleum in the 1930's, the economy of Trinidad-Tobago was largely dependent on export oriented agriculture, principally sugar and sugar by-products, including molasses, rum and bagasse.

Of the total land area, 28% of Trinidad-Tobago is classified as agricultural and 43% as forest. The dominance of the plantation in agriculture has resulted in a type of development geared to metropolitan interests and the creation of a dualistic structure. There is a basic dichotomy between peasant and plantation agriculture, with the former characterised by undercapitalisation and low yield, and the latter by relatively large inputs of capital and high productivity per acre. Agriculture has also suffered from a general movement away from the land, partly a result of education and of opportunities in manufacturing, tourism and the oil industry, but is also as a consequence of the stigma attached to agricultural labouring associated with the history of slavery and the plantation system.

With the increasing importance of especially the oil industry, the movement of labour away from the land and unfavourable movements in prices for cash crops, the agricultural sector has been in a general decline at least since the early 1960's, when Trinidad-Tobago was a net food exporter. By 1980, three quarters of the country's food valued at 350 million US dollars had to be imported. In 1951 agriculture accounted for over 17% of output, in 1962 it accounted for 10% of output and 20% of employment, by 1980 it contributed 2.8% of output and less than 15% of employment. The share of sugar in total exports has declined from 7.6% in 1960 to 1.5% in 1979, this being the result of both price and output levels,

and the greater share of petroleum in trade.

The cocoa industry is the second largest agricultural foreign exchange earner, but fears of disease for example have discouraged farmers from specialising in such crops. The other main commercial crops are coffee and citrus products.

Widely fluctuating world prices for Trinidad-Tobago's major export crops, a widening urban-rural wage differential, rising production costs, insufficient agricultural services and a weak marketing system for domestic food crops have all contributed to the decline of the agricultural sector during the 1970's. The government is determined to reverse the trend toward greater dependence on food imports and, to that end, has adopted a system of subsidies and price supports as well as a priority program of investment in the agricultural sector, including land settlements, mixed farming with tree crops for hillside areas, the establishment of extensive acreages of fruit crops, and the rehabilitation of old cocoa plantations where possible.

Trinidad is one of the main oil producing countries outside of the Middle East, with reserves of 68 million tons. Over the past twenty years petroleum has dominated and been central to Trinidad-Tobago's economic growth and development. By the end of the 1970's this sector was accounting for around 50% of GDP, 90% of export earnings and the major part of government revenue deriving from production and refining. In the late 1960's oil revenues declined, but this trend was reversed in 1972 when substantial reserves of offshore oil were located, and that coupled with the subsequent discovery of some 198 billion cubic metres of natural gas, reestablished the country as a major oil and gas producer. The dominant position of oil in the economy was further reinforced by the oil price increases in 1973-74 and 1979. The strategic geographic location of the islands has favoured the establishment of a large refining complex; the rated capacity of the two existing refineries exceeds 23 million

tons annually. Because of the excess capacity of the refineries, it is necessary to import over 75% of the crude oil input. More recently (1982) falling world demand threatened heavy redundancies in the two refineries. Although petroleum revenues have significantly enhanced Trindad's economic capability, the industry employs fewer than 10,000 workers.

In the late 1960's in an effort to reduce an excessive dependence on petroleum, the government undertook a 3.5 - 5 billion dollars industrialisation program, which included major investments in a steel plant and rolling mill, an aluminium smelter, a cement factory, and a methanol plant, as well as enterprises for the production of polyester fibres, plastics and electronic equipment. Other projects have included the establishment of petrochemical and fertiliser facilities, while a liquified natural gas plant is projected.

Manufacturing, the second major growth area in the economy is dominated by the refining of petroleum and sugar, assembly type operations (including motor vehicles) and the manufacture of fertilisers, cement, furniture, garments, processed foods, chemicals and non-metallic products including asphalt.

The food processing industry, which is expected to create linkages with the agricultural sector and contribute to a reduction in the food import bill, has only been having very moderate success.

Manufacturing has been actively encouraged since the 1940's through a combination of government measures with emphasis on import substitution. In addition to fiscal incentives to 'pioneer industries', Trinidad-Tobago began in the early 1960's to allow duty free imports of intermediate inputs to approved firms in certain industries as a means of promoting industrial growth. This concession has come to be extended to the majority of manufacturing establishments in the organised sector. The government is the largest investor in the sugar industry, petroleum production and distribution, meat packing, hotels and

related industries. The Industrial Development Corporation serves as the principal agency in promoting industrial investment and development.

Although tourism is the second largest source of foreign exchange in Trinidad-Tobago, and has created many jobs it has also been perceived as a creator of social tensions between natives and tourists and is seen as corrupting the values of locals. This sector is seasonal, may not be the most efficient way to create jobs, there has been a tendancy for high leakages of tourist earnings to import western foods etc. for the tourists, as well as repatriation of profits of the hotel chains, and its linkages with the rest of the economy especially agriculture and manufacturing has been weak.

Services as a whole, both private and government related, contributed 35% to GDP in 1978, with the drop from 46% in 1960 attributable to growth of the hydrocarbon industry rather than to an absolute decline in services output. Over the same period employment in the services sector grew by 4% to 48% of the workforce.

Tobago is primarily a tourist centre with virtually no industry.

Like the majority of Caricom members, Trinidad-Tobago is an open economy. Between 1960 and 1973 the share of exports in GDP was generally greater than 50%, in 1974 it stood at 97.8% and between 1975 and 1977 greater than 60%. Imports as a percentage of GDP (1960-79) was only less than 50% in 1979. Between 1960 and 1974 Trinidad-Tobago typically experienced trade deficits, but since then the balance has been consistently positive, largely because of the dominance of petroleum in the export sector. With respect to non-oil trade, the deficit almost tripled between 1974 and 1979 and the dependence of the economy on imports of food and intermediate and capital goods has remained high, averaging 80% of merchandise imports.

Petroleum exports have generally accounted for over 80% of total exports apart from the period 1966 - 1972 when oil revenues declined as reserves fell, although this

was reversed with the discovery of new offshore reserves. By 1979 petroleum represented over 90% of exports. Conversely the share of sugar in exports has been on a long run decline, from 7.6% of total exports in 1960 to 1.5% in 1979. This has been the result of both the decline in the sugar industry and the growth of the petroleum sector.

Petroleum has also been an important component of imports as a result of the excess refining capacity. In 1960 it accounted for 31.5% of imports, rising to a peak of 72.8% in 1974 and falling to 28.3% in 1979. Crude for the refineries is supplied almost exclusively by Saudi Arabia and Indonesia. Trinidad-Tobago's major trading partners are the USA, the UK and Japan.

After relatively slow growth during the 1960's when the annual average growth rate of real GDP was just under 4%, the last six years of the 1970's witnessed a dramatic change in the sectoral development of the national economy. In particular, the petroleum sector under the impetus of the steep rise in oil prices and significant new offshore discoveries, has increasingly dominated the economy. Although the growth of real GDP fluctuated around 7% over 1976 - 1980, because of sluggish growth in petroleum output, it fell to an estimated 6% in 1981, GDP grew by an average of 10% per annum during the post oil shock period.

With large gains in net international reserves (from oil revenues), the country has been able to pursue a development policy relatively free from external constraints. Moreover, they have attempted to use oil revenues to diversify the economy, particularly by concentrating on petrochemical industries based on natural gas feedstocks.

However, this impressive performance has gone hand in hand with a drop in agricultural production since 1972, due to internal terms of trade moving against the primary sector. While import substitution raised the internal price of consumer goods, export prices for the country's

three major export crops, sugar, cocoa and coffee, fluctuated and then declined in recent years. The result was a shift of employment into services, construction and industry, but it less than fully compensated for the decrease in the share of agricultural output in GDP.

The second major growth sector in the economy has been manufacturing. Manufacturing output (excluding petroleum and sugar refining) has been growing, although at a declining rate: 20% in 1977, 8% in 1980 and 4% in 1981. Construction grew for several years at rates of over 20% per annum, but since 1979 shortfalls in the output of construction materials, especially of cement, as well as labour scarcity, have hampered the growth prospects of the industry.

Trinidad-Tobago suffers from an unemployment problem although it has fallen from 15.2% in 1975 to 11.9% in 1979, as a result of the rapid expansions of especially the construction sector. Oil related and other new industrial projects have tended to be capital intensive with skilled labour requirements that are unable to ease unemployment.

Inflation is an equally intractable problem. After low rates of inflation during the 1960's, the annual rate for 1970 - 1978 was over 20%. In an effort to halt these spiraling increases, the government instituted a package of price controls as part of its national economic policy, and also subsidises such commodities as gasoline, cement, rice, flour, cooking oil and livestock in order to maintain lower prices. The net effect of such actions has been limited because of recurrent wage increases granted to the powerful oil, sugar and transport workers unions.

B the Lesser Developed Countries

Belize

Belize (formerly British Honduras) lies on the Caribbean coast of Central America, with Mexico to the

northwest and Guatemala to the southwest It covers an area of 8867 square miles, and had a population of 150, 000 (1982) comprised of 51% negro, 22% mestizo and 19% Amerindian.

Belize was first colonised by British settlers in the seventeenth century. In 1935, a twelve member legislative council was introduced, and the colony was granted internal self government in 1964, with the UK retaining responsibility for defence, external affairs and internal security. Belize gained independence in 1981.

Of the total land area, 38% is agricultural (5% of which is cultivated) and 46% is exploitable forest. Agriculture accounts for 25% of GDP and 39% of the labour force. The most important agricultural products are sugarcane, citrus fruit, corn, molasses, rice, beans, bananas and livestock products.

The economy was formerly based on timber exports, but the cultivation of sugar, bananas and citrus fruit, which in 1980 represented about 75% of the total value of exports, is now more important. Sugar exports alone account for more than half of the total value of domestic exports.

The government is funding irrigation schemes for new banana plantations which will serve markets in Europe. The fishing and livestock industries are also being developed, and under a ten year plan, Belize will become a major cattle producer for the Caribbean Food Corporation.

Manufacturing, especially of clothing, accounted for 13% of GDP in 1980. Other industries include sugar refining, timber and forest products, furniture, rum and soap. An industrial park is to be constructed to stimulate growth in the manufacturing sector, but shortage of manpower remains a serious constraint.

Tourism is being promoted but has suffered from unfavourable publicity over the Guatemalan border dispute.

Belize is an open economy with an export to GDP ratio of 72.9% and an import to GDP ratio of 105.8% in 1979. Exports are dominated by foods - sugar, fish, molasses and

Citrus fruit - as well as garments. The main imports include machinery and transport equipment, food, manufactured goods and fuels. The USA and the UK are Belize's main trading partners.

Antigua and Barbuda

The islands of Antigua, Barbuda twenty five miles to the north and their dependency Redonda twenty five miles to the southwest with a total area of 170 square miles, lie along the outer edge of the Leeward Islands chain. The population of 77,000 in 1982, is almost entirely African negro.

Antigua was colonised by the British in the seventeenth century. The island of Barbuda, formerly a slave stud farm for the Codrington family, was annexed to the territory in 1860. Until 1959 Antigua was administered with eight surrounding British territories under a federal system as the Leeward Islands. The colony participated in the West Indies Federation. In 1960 a new constitution came into force in Antigua and the other Leeward Islands, giving each its own administrator and an enlarged legislative council. Attempts to form a smaller East Caribbean Federation failed and Antigua became an Associated State with full internal self government in 1967. The territory finally became independent, as Antigua and Barbuda in 1981, remaining within the Commonwealth.

Of total land area 54% is arable, 5% pasture and 14% forest. Agriculture has been declining in importance since the 1960's largely due to the collapse of sugar in 1972. However, efforts are being made to revive this sector with the refurbishment of a sugar factory. There are also plans to establish a fish processing plant by 1984. It has been estimated that up to 4,000 tons of fish per year could be yielded from the deep sea fishing grounds. The government is also hoping to increase the area currently under sea island cotton, once the main export crop. The main crops include cotton, bananas,

vegetables and maize.

Even in the last few years the share of agriculture in GDP has fallen from 9.2% in 1977 to 7.8% in 1980. Over the same period the share of employment has fallen from 11.7% to 9.3%.

Manufacturing employs 7% of the labour force and has increased its share of GDP from 5.2% in 1977 to 8.9% in 1980. It consists mainly of import substituting industries - consumer goods (rum, garments, household appliances), building materials, tyre retreading and motor vehicles for export. The West Indies oil refinery which is partly government owned, was reopened in 1982 after a six year closure, and has the capacity to refine up to 20,000 barrels of imported crude petroleum per day The refinery will process supplies of petroleum obtained at concessionary rates from Mexico and Venezuela for all seven member countries of the Organisation of Eastern Caribbean States (OECS) and possibly supply petroleum to neighbouring French dependencies. The government is holding negotiations with several companies to begin offshore oil exploration in the near future. The establishment of offshore banks in Antigua and Barbuda is being encouraged to provide an additional source of revenue. In the last five years Antigua has also established itself as an entrepot and distribution centre.

Tourism is the main economic activity. Antigua was one of the first Caribbean states to actively encourage tourism in the early 1960's and by 1981 the industry accounted for 60% of employment and an estimated 40% of GDP. Antigua and Barbuda draw an increasing number of tourists from the USA, Canada, the UK and other Caribbean countries.

The composition of exports has changed in the last twenty years. In 1965 almost 93% of domestic exports were of food but when the oil refinery was operational in the early 1970's petroleum products dominated, accounting for 87% of exports in 1975. With the reopening of the refinery petroleum products are likely to once again

dominate exports. Re-exports are also an important component of trade, in 1980 accounting for 66% of domestic plus re-exports. Other exports include clothing, rum and lobsters. The three major imports are fuel, food and machinery. In 1980 food accounted for almost 30% of imports, and the accelerated growth of imports can be traced to the food import bill associated with tourism. Antigua's main trading partners include the UK and the USA although the major export partners have traditionally been the Commonwealth Caribbean, which accounted for 75% of total domestic exports in 1981.

Growth in GDP between 1977 and 1979 averaged 7.5% annually, falling to 3% in 1980 and 4% in 1981. The decline in GDP growth is largely associated with the drop in the number of tourists attributable to the recession in the major industrial countries. During 1977 - 80 the growth of the manufacturing sector mirrored the intensified activity in the export oriented industrial subsector. The rate of inflation was estimated at 16% and unemployment at 20% in 1982.

Montserrat

Montserrat is one of the Leeward Islands, lying about 35 miles north of Guadeloupe. With an area of 39.5 square miles and a population of 12,000 (1980), Montserrat is the smallest member of Caricom.

Ministerial government was introduced in 1960, and in 1967 Montserrat elected to remain a British colony rather than become one of the West Indies Associated States.

About 4% of the land is under cultivation, the principal crops being cotton, limes, potatoes, tomatoes and hot peppers. A further one half is potential agricultural land and the government is pursuing a resettlement programme for small scale farmers. Although there is only a limited area suitable for arable farming, the prospects for livestock are good and

in recent years exports of cattle have contributed a significant part to Montserrat's balance of trade. An area of 5,000 acres is covered by forests and trial plots of pine, eucalyptus and mahogany have been established.

Agriculture has been in decline from the 1950's since the collapse of the plantations, and the government is trying to revive agriculture through its Agriculture Sector Plan 1979-82.

Recently, agriculture's share of GDP has declined from just over 10% in 1975 to under 8% in 1981. Employment in this sector has also fallen from 19% in 1970 to 9.4% in 1981.

Light industry is expanding on the island's industrial estate, and manufacturing, mainly of plastic bags, textiles and electronic appliances, accounted for 80% of the total value of exports in 1981

Because of the small size of the country and of the labour force any one project is likely to have a substantial effect on the economy and limits the scale and type of industry that can be established.

The government is committed to developing a strong private sector based on export oriented private investment to reduce the economy's reliance on tourism and agriculture. The government has played an important role by constructing factory shells and direct promotion of cottage style industries. Currently (1981) manufacturing contributes around 8% to GDP and over 10% to employment.

Tourism contributes about 25% of GDP annually, and after a lull in the early 1970's is active again. With around 21,000 tourists in 1981 the tourism sector remains dominant in the economy.

Between 1975 and 1980 GDP grew at an average annual rate of over 4%, only agriculture declining. Because of its small size, the economy is extremely sensitive to major investment projects. For example the strong growth and burst of inflation in 1979-80 were largely attributable to construction of a medical college. The current account balance of payments developed large trade

deficits in 1979-80 also because of construction related imports and the rise in fuel costs.

St.Kitts Nevis

The islands of St.Kitts and Nevis are situated at the northern end of the Leeward Islands. The total land area covers 153 square miles. The population of 52,000 (1982) is mainly of African negro descent.

St.Kitts was settled in 1623 as Britain's first colonial foothold in the West Indies. The French settled part of the island in 1624 and conflict over possession of the island continued until 1783 when St.Kitts was ceded to Britain under the Treaty of Versailles. Nevis was colonised by the British in 1628. In 1816 St.Kitts, Nevis, Anguilla and the Virgin islands were united to form one colony. Under the Leeward islands Federation, formed in 1871 the unit was reduced to St Kitts and Nevis, although Anguilla was shortly rejoined to the territory. St.Kitts-Nevis-Anguilla participated in the West Indies Federation from its inception in 1958 until its dissolution in 1962. Anguilla was formally separated from the other islands in 1980. St.Kitts-Nevis has had full internal self government since 1967, and is a dependent territory with full internal autonomy as a British 'Associated State'.

Of the total land area 40% is arable, 10% pasture and 17% forest. The economy is based on agriculture, particularly the cultivation of sugarcane, traditionally the major factor determining economic performance. Not only is sugar the dominant export, but the government is still dependent on the proceeds from the sugar levy and export duties for one fifth of current budget receipts. Agriculture accounted for 25% of GDP in 1980 compared with 35% in 1977, and employment in this sector has fallen from 37% in 1970 to 33% in 1980. Sugar production has been declining since the late 1960's, and as sugar is the main employer and foreign exchange earner, the government is attempting to halt a general economic

decline by restructuring the industry, which is state owned, and encouraging agricultural diversification. St. Kitts-Nevis has the potential to expand several other agricultural activities including cotton, groundnuts, livestock and fruit and vegetables.

In Nevis the main economic activity was sugar production up to the 1950's, when emphasis switched to cotton, livestock and to a lesser extent coconuts.

The development of agriculture and its associated industries, and manufacturing is geared to import substitution to satisfy local food markets and the tourist trade and provide raw materials for agro-industries. Nearly one third of the factories in the small industrial sector makes garments, shoes or textiles. other industrial activities include metal working, assembling electronic components, equipment and televisions data processing, food processing and bottling especially of beverages.

Tourism is developing rapidly and receives considerable government support. In the past, external transport has been a problem, but in recent years the government has invested heavily in transport infrastructure.

Because of the small size of the economy, export promotion is an integral part of the development strategy. Exports are dominated by sugar and the main imports include food, manufactures and fuel. The UK and USA are the main trading partners.

After several years of satisfactory growth, the economy stagnated in 1981. Although there was expansion in manufacturing, tourism and construction, this barely compensated for the continuing decline in sugar output, that has suffered since 1978 from disease. In 1981 the value of sugar exports fell by 13% due to the decline in volume and the lower world prices.

In Nevis the economic decline in the last decade has resulted in heavy emigration, the population falling from 11,000 in 1970 to 9,000 more recently.

Dominica

Dominica is the largest of the Windward islands (area 290 square miles) population 80,000 in 1982). It is located off the northern end of the Windward chain of the Lesser Antilles, between Guadeloupe and Martinique. The island is dominated by a high moutain range running like a spine with lateral spurs on either side.

Dominica was claimed by both France and Britain during the seventeenth century, but in 1748 it was stipulated that the island should be left in the hands of the Caribs. In 1763 it was assigned to Britain under the Treaty of Paris, although it was subsequently captured by the French in 1778, and finally restored to Britain in 1783. After 1833 it was administered as part of the British Leeward Isalnds until 1940 when it was transferred to the Windward Islands. In 1967 it attained internal self government as one of the West Indies Associated States, finally achieving independence in 1978. The majority of the population are descendents of West African slaves who were imported in the seventeenth and eighteenth centuries as plantation workers.

Of Dominica's total area, 24% is designated as arable, 2% as pasture and 67% as forests. Agriculture is the principal economic activity accounting for one third of GDP, employing 40% of the workforce and supplying 80% of merchandise exports.

Bananas are the main crop, constituting 70% of the nation's exports in 1978, and 20% of GNP. Dominica's bananas are sold almost exclusively to the UK, with Geest Industries as the sole exporters.

Coconuts are also important, providing copra for export (mainly to Barbados) as well as edible oil and soap. Limes and other citrus fruits are also grown; other crops include cocoa, cinnamon, sugarcane, roots and tubers, red beans and tobacco Dominica is the world's largest exporter of bay oil

There is a small amount of livestock including cattle, pigs, sheep and goats, but this is reared mainly

for domestic consumption. Fishing is a traditional occupation for the islanders and a number of coperatives have been established to provide vessels and equipment to fishermen on a hire basis.

Attempts are being made to exploit Dominica's extensive timber reserves to provide lumber for export and to supply furniture manufacturers. The government established a Forestry Industries Development Corporation in 1977, but almost 90% of the timber was destroyed during 1979 by two hurricanes.

One of the reasons for low per capita GNP in Dominica is that agricultural production on the island is constantly hampered by poor soil conditions as well as the vagaries of the weather.

Industry and manufacturing is only begining to evolve in Dominica, accounting at present for less than 5% of GDP. An Industrial Development Corporation was established in 1974 to promote and encourage the growth of new industries, especially export oriented, labour intensive light industry. The island's major industries involve the refining or processing of basic agricultural products such as crude edible oil as well as import substitutes such as soap, garments tobacco and beverages. A concession granted to a US firm in 1981 to export some two million tons of water annually is expected to produce revenues of around one million US dollars per year. In 1980, West German interests agreed to begin construction of a 300 million dollar cement plant, while prawn farming and marketing of cut flowers and ornamentals are among the activities to be introduced in the near future.

The major obstacles to development in general, and to industrial development in particular has been the lack of natural resources (apart from pumice which is mined) and inadequate infrastructure.

Despite its many natural attractions, Dominica has never achieved the tourist success of its neighbours, and the sector is as yet undeveloped. Since 1979 the government has encouraged the industry by improving the

international airport, and has designated areas of the island as nature reserves to ensure that there will always be areas of natural beauty to attract visitors. This sector was dealt a severe blow by hurricanes in 1979, the number of visitors falling from 27,944 in 1978 to 16,611 in 1981.

Dominica is an open economy that depends on one commodity, bananas, for 70% of export earnings, agriculture in total accounting for 80%. Imports as a share of GDP have been rising in the past few years to 93.6% in 1980. Exports share of GDP on the other hand has been declining from over 40% in 1976 to just 17.8% in 1980. This lower share is largely the result of hurricane damage in 1979 that meant that there were no banana exports during a large part of 1980. Other exports include lime juice and oil, and cocoa.

Dominica has faced a significant trade imbalance during the 1970's because of its needs to import food, most machinery and manufactures, and such building materials as cement. As a result of the hurricane of 1979 this imbalance will worsen as it will take the economy several years to recover.

The UK remains the main trading partner accounting for 56% of Dominica's exports and 25% of her imports in 1979, while the market share of the members of Caricom has increased since 1974.

Dominica's economy was crippled by the hurricanes of 1979 and 1980, nearly 95% of the bananas and citrus plantations and 75% of the coconut plantations were destroyed along with a large part of the fishing fleet. As a result GDP fell by 17% in 1979 and another 10% in 1980. Dominica also suffers from a high rate of unemployment estimated at over 24%. A five year economic reconstruction program was launched in 1980.

Grenada

Grenada with a population of 109,000 in 1982 and area of 133 square miles, encompasses a mountainous group of

islands located approximately 90 miles north of Trinidad-Tobago, and is the most southerly of the Windward Islands. The country includes the main island of Grenada, the smaller islands of Carriacou and Petit Martinique and a number of small islets.

Grenada was discovered by Columbus in 1498, and attracted French settlers during the sixteenth century. The island remained under French control until 1762 when it was captured by Britain The French were in control after 1779, but the Treaty of Versailles in 1783 acknowledged British dominion. Grenada was a member of the Federation of the West Indies and the West Indies Associated States until it attained independence in 1974. The population is mainly of African negro descent.

Of Grenada's total area, 44% is cultivated, 4% is pasture and 12% forests. Grenada's economy is essentially agricultural, this being the largest sector, in terms of employment (around 40% of the labour force), although largely at the subsistence level. Four products alone, bananas, cocoa, nutmeg and mace represent about 75% of this sectors value added, the remaining 25% accounted for by sugarcane, fruits and spices, and root crops. Nutmeg, cocoa and bananas are the principal exports, although mace, sugar, cotton, citrus fruit and minor spices are also significant.

Although Grenada remains dependent on the export of agricultural commodities, the diversity of the crops allow a degree of flexibility when crop fails as the impact can usually be buffered by income from other farm products.

Nutmeg, of which Grenada is second only to Indonesia among world producers, was traditionally the largest export earner; however, an upward turn in the world market price for cocoa in 1978 pushed total income for cocoa ahead of nutmeg.

A sizeable amount of Grenada's farmland consists of smallholdings including one fifth of the area producing cocoa, one quarter of the area producing bananas and half the area producing nutmeg.

Livestock production is important for local consumption though meat and milk still have to be imported. Fishing is still largely a subsistence occupation, although Cuba and the USSR have provided Grenada with equipment and expertise to develop its fishing industry. In 1980 a fish processing plant was established, and in 1981 the government formed a National Fishing Company. A reforestation program has been established to augment the 10,000 acres of forests, 75% of which are government owned.

Development of manufacturing industries has not kept pace with other activities, owing mainly to the small size of the local market. Industry remains small scale and is geared toward the processing of domestic agricultural products - sugar, rum, spices as well as a factory producing soap, coconut oil and meat - other activities include a cigarette factory, a bottling plant, paper products, while others such as a flour mill, beer plant, soft drink plant and garments use almost exclusively imported inputs.

An asphalt plant has been built with Cuban assistance, and another new factory has begun processing coffee, both locally grown and imported from Guyana and Trinidad, and there are plans to expand into cocoa processing.

A timber milling complex recently purchased from Australia is expected to raise the domestically produced component of timber needs from 2% to 80%-90% within five years.

The government's economic policy is based on development of agro-industries and fisheries geared to import substitution and the promotion of tourism. Manufacturing contributes around 2.5% of GDP.

Grenada shared in the rapid growth of tourism in the Caribbean in the late 1960's and early 1970's, and this sector was an important source of foreign exchange which was relied on to offset a consistently adverse balance of trade. However, in the mid-1970's the sector declined substantially as a result of the world recession and of the coup in 1979. In 1982 only 82,300 tourists arrived,

compared with 148,667 in 1978. A further obstacle to the development of the sector is that airline connections are presently made through Venezuela, Barbados and Guadeloupe, although an international airport at Pointe Saline is under construction.

The tourist sector accounts for around 10% of GDP and provides direct and indirect employment for 6% of the labour force.

Grenada is a relatively open economy that remains dependent on the export of agricultural commodities. The main exports are cocoa, nutmeg, mace and bananas, in 1980 accounting for 39%, 18%, 4% and 23.7% of total exports respectively, although these shares do vary depending on world prices. In general these four commodities account for more than 90% of total exports. More than half of merchandise imports are accounted for by consumer goods, especially of food products, although capital goods, fuels, chemicals and fertillisers are also important.

Local manufacturing is geared primarily to the domestic market although exports of certain products including furniture, garments and processed food products have increased in the last few years.

The majority of exports are to the UK, West Germany and the Netherlands also being important (43.9%, 8.1% and 10.4% respectively in 1980). The West Indies, at 37.4% is Grenada's most important source of imports followed by the UK (17.9%) and the USA (19.4%).

Most of Grenada's export trade has been the responsibility of statutory marketing boards: the Grenada Cocoa Association, the Grenada Cooperative Banana Society and the Grenada Cooperative Nutmeg Association (which also includes mace). Since 1974 the National Import and Marketing Board has directed the importation of basic foodstuffs.

After a sustained economic recovery following the massive destruction caused by Hurricane Janet in 1955, economic activity declined in the early 1970's, and bottomed out in 1974 in the wake of acute domestic crises

accompanying Grenada's independence. In the following years, the economy first grew rapidly, propelled by favourable terms of trade for agricultural products and growing tourist receipts, but the growth rate progressively declined as early losses were recouped and structural weaknesses began manifesting themselves. After the change in government in 1979, tourism levelled off and then dropped while agriculture was badly hit by weather, including a hurricane in 1980, and by drastically falling international prices for Grenada's principal exports. In 1981 agricultural production recovered significantly, but tourism continued to worsen and the terms of trade deteriorated. A drastic fall in GDP was avoided through the growth of the construction sector (which experienced the highest growth rate in the economy), spurred by public investment programmes in the international airport and roads. Although unemployment fell from 35% in 1980 to 27% in 1981 it has remained a problem. Because of the small internal market, long term growth depends on export performance.

St.Lucia

St.Lucia with an area of 238 square miles and a population of 119,000 in 1982 is the second largest of the Windward Islands, lying between Martinique and St. Vincent. The island is of volcanic formation and is relatively hilly. The population is mainly of African negro descent.

St.Lucia was established as a French colony in 1651, this status not being challenged until 1664 when one thousand Barbadians and Caribs invaded the island and took it without any resistance. This event marked the begining of a struggle between the French and British for the island that lasted for over a century. Britain had undisputed control after 1803, and the island became a British dependency by the Treaty of Paris in 1814. From 1833, St.Lucia was administered as part of the Leeward

Islands, and in 1940 was incorporated into the Windward Islands. In 1967 it became a West Indian Associated State, and an independent member of the Commonwealth in 1979.

Of St.Lucia's total land area, 50% is arable, 3% pasture and 19% forest. Agriculture is the largest economic sector in terms of employment (40% of the labour force) and is the main export earner (60% of export earnings). The most important crop is bananas, of which St.Lucia is the principal exporter in the Windward Islands. Although a hurricane in 1980 destroyed 97% of the banana crop, bananas export share of total exports is usually over 40%. Bananas from St.Lucia have a preferential outlet in the UK under Lome.

The island also produces coconuts, cocoa, roots, vegetables, other fruits, spices and sugar. Agriculture is vulnerable because of high dependence on bananas and coconuts, both crops suffering from periodic natural disasters, low productivity and possible market constraints. The sector also faces the problem of an antiquated system of land tenure; since most farms are smaller than ten acres, they are not optimal development targets.

Considerable efforts are being made to diversify agricultural production and to reduce the substantial food import bills.

Livestock consists of cattle, pigs, sheep and goats. Fishermen's cooperatives account for most of the annual catch of 2,500 tons, and a modern fishing complex with cold storage facilities is planned. Forest covers approximately 20,000 acres in the mountainous interior, with 100 acres being replanted every year.

In the absence of any significant mineral resources, industry is largely confined to processing of agricultural output and the manufacture of import substitutes, including paper and paperboard (mainly cartons for shipping such products as bananas), garments and textiles.

Since 1972 there has been considerable expansion in

the industrial sector and by 1979 the manufacture of plastics, garments, beer and industrial gases and the assembly of electronic components were established industries. An official industrial programme has aimed to reduce St.Lucia's dependence on agriculture, notably by attracting foreign investment. Under the direction of the National Development Corporation, established in 1971, a major industrial development area, including a free zone, is under construction. Another development area is the site of the country's largest single venture, an oil transshipment terminal, intended for storage and transshipment of crude oil for delivery to refineries in other Caribbean islands, was opened in 1982, and is hoped to produce revenues of 8 million East Caribbean dollars per year. Current plans also call for construction of an oil refinery and in mid-1981, it was announced that Saudi Arabia may build a second oil terminal on the island.

By 1976 the effects of the programme were apparent; exports of manufactured goods represented 48% of total exports, compared with 25% in 1974.

In the latter part of the 1970's, manufacturing contributed between 7% and 8% of GDP and employed 6% to 8% of the labour force. Construction contributed 11% to 16% of GDP and employment rose from 0.8% in 1970 to 11.6% in 1975 and subsequently fell to 7.3% in 1980.

Tourism is the third most important economic activity. St.Lucia is promoted as one of the last truly unspoilt Caribbean islands. However, it is only since 1966 that the island's tourism potential has been developed.

During the 1970's the tourist industry became the area of fastest economic growth, emerging in the second half of the decade as St.Lucia's second most important source of foreign exchange. However, by 1981 there was a marked slump in visitor arrivals. The majority of tourists come from Canada, the USA and Europe.

Between 1976 and 1982 exports share of GDP was between 30% and 40%, and imports share between 79% and

109%. Banana exports consistently account for over 40% of exports except during 1980-1982 when hurricane damage destroyed the crop. As mentioned above, manufactured exports are becoming increasingly important.

Despite expansion of non-traditional agriculture and of manufactured goods, which together contribute 40% of export earnings, St.Lucia ran a large deficit between 1975 and 1979. Income from tourism and remittances from overseas workers have however restrained the current account deficit. Contributing to the imbalance have been imports of intermediate goods, machinery and transport equipment needed for industrial development, particularly for the oil transshipment terminal. More recently there has been a slowdown in exports and tourists receipts. St.Lucia depends entirely on imported fuel from Venezuela and Trinidad-Tobago for energy requirements.

Caricom members account for a significant share of St.Lucia's trade, but the UK, which has accorded preferential treatment to the island's banana exports, continues to be its leading trade partner. The USA in 1977 accounted for 25% of St.Lucia's imports.

St.Lucia experienced a rapid expansion during the 1960's and 1970's, prinicpally in agriculture and tourism. More recently, especially since the mid-1970's, manufacturing has been of increasing importance. Between 1976 and 1978 manufacturing output increased at an annual average rate of 16% and contributed significantly to growth in exports and real GDP. Over the same period construction grew at an average of 33%, the result of the biggest construction activities in tourism and the execution of large public sector projects and the construction of an oil transshipment and storage terminal. Between 1975 and 1978 agricultural output rose by an annual average of 14%. Real GNP grew around 11% annually.

The St.Lucian economy experienced a severe downturn in 1980, the result of natural disasters and a decline in private investment due to political instability. The

hurricane of 1980 caused GDP to drop by as much as 15%, with damage estimated at 93 million dollars. By 1981 the three main sources of foreign exchange (agriculture, tourism and industry) were all suffering from reduced demand.

Although inflation fluctuated between 9% and 11%, in 1980 it accelerated to around 20%, and stood at 16% in 1981. This reflected higher import prices, increased prices of locally produced clothing and beverages and increased wage pressures. Given the high degree of openess of St.Lucia, domestic price trends are influenced largely by price developments abroad. Since the early 1960's the Price Control Division of the Ministry of Trade has enforced price ceilings on selected consumer goods and has administered prices for petroleum derivatives.

Unemployment which was around 15% during the 1970's was above 30% in 1981.

St.Vincent and the Grenadines

St.Vincent is located in the Windward group of the Eastern Caribbean, south of St.Lucia and west of Barbados. Its jurisdiction encompasses the northern Grenadine islets of Beguia, Canouan, Mayreau, Mustique, Prune Island, Petit St.Vincent and Union Island. St.Vincent has an are of 150 square miles and a population estimated in 1981 at 117,000, mainly of African negro descent.

St.Vincent was discovered by Columbus in 1498, but remained in the possession of the Carib Indians until 1627. During the seventeenth and eighteenth centuries it was claimed by both Britain and France, and was finally assigned to Britain in 1783 by the Treaty of Versailles. In the 1830's it became part of the general government of Barbados and the Windward Islands, and after separation of the two in 1885 was administered from Grenada. St Vincent was a founding member of the Federation of the West Indies in 1958, and on the failure of negotiations to form the East Caribbean Federation it

joined the West Indian Associated States in 1969, finally attaining independence in 1979.

Of the total land area 50% is arable, 3% pasture and 44% forest. Agriculture is the basis of the economy, employing over 60% of the workforce and accounting for 90% of export earnings, although its share of GDP fell from 40.3% in 1961 to 18.1% in 1978. Bananas are the main crop, in 1981 providing 60% of total export earnings. In addition to bananas, the major crops include arrowroot (St.Vincent is the world's leading producer), coconuts, nutmeg, cocoa, mace, ginger, sugarcane, tobacco and locally consumed vegetables, roots and fruit.

Approximately 70% of both bananas and arrowroot are produced from smallholdings of ten acres or less. Bananas generate a regular cash income to smallholders and have a guaranteed income, although low productivity is a problem.

Livestock raising is limited to small farmers, and includes cattle, sheep, pigs and goats. Although fishing is encouraged the island is a net importer of fish. The greater part of the central highlands is covered with forests owned by the state. Of this some 15,000 acres are designated as forest reserves.

Apart from food processing (with leading products being arrowroot starch, coconut oil and flour), there was very little manufacturing in St.Vincent until the 1970's. Expansion of this sector was primarily the work of the St.Vincent Development Corporation established in 1971 to promote joint ventures. To encourage growth in this sector, two industrial estates have been established and tne government is offering incentives including tax exemptions to foreign investors. One of these, a flour mill serving all four Windward Islands was opened in 1978. In early 1981 the country's sugar mill, reopened nearly twenty years after a fire forced its closure, and it is hoped it will eventually replace brown sugar imports. In 1978 manufacturing contributed 22.6% of GDP and by the end of 1980 surpassed agriculture in share of GDP for the first time. The sector includes amongst its products

concrete, furniture, wearing apparel and cigarettes. The government remains interested in attracting foreign investors, but scant resources make large-scale industrial projects unlikely.

Although tourism has been relatively slow in developing, mainly due to the fact that the airport on St.Vincent has not been served by internal airlines, it is growing in importance and after agriculture is the most important source of foreign exchange. Visitors are mainly from other Caribbean countries, and the USA and there are serious attempts to cultivate new markets in Latin America as well as expanding existing ones. In 1979 there were 63,400 visitors, an increase of 13% over 1978 and 50% over 1977.

St.Vincent's exports are dominated by agricultural produce principally bananas, as well as arrowroot and copra. On the import side food, all capital goods and transport equipment, most consumer goods, chemicals, fertilisers and fuels must be purchased abroad. In the second half of the 1970's the recurrent trade deficit was reduced as manufacturing and tourism expanded. But with the eruption of Mt.Soufriere in 1979 and the hurricane in 1980 the loss of exports hampered trade recovery in 1979 and 1980 and the current account deficit rose to 30% of GDP.

Over 90% of exports are handled through statutory organisations such as St.Vincent Cooperative Arrowroot Association.

St.Vincent's major export partners in 1972 were the UK (61% of total exports), Caricom (30%) and the USA (9%). On the import side Caricom supplies 29% of imports, the UK 28%, Canada 9% and the USA 9%.

Although the economy has undergone major structural adjustments in recent years, with rapid development of offshore processing and increases in the tourism sector, St.Vincent, with the third lowest per capita GDP of the independent countries of the Western hemisphere, has also experienced an unsettled economic climate as a result of

several factors: heavy reliance on foreign assistance, dependence on one crop - bananas, for much of foreign exchange earnings, a high rate of unemployment estimated at 60% for the early 1970's and 20% more recently, and extensive damage to agriculture resulting from the eruption of Mt.Soufriere in 1979 and Hurricane Allen in 1980. In 1980 the hurricane destroyed 95% of the banana crop and 75% of nutmeg production.

The impact of the recession in industrial countries on St.Vincent was small, only causing a modest setback in tourism, and foreign aid and private transfers has historically permitted consumption expenditure to exceed GDP. Inflation average 18% over 1979 - 80 due to the rapid increase in import prices and shortages caused by the natural disasters.

Gross domestic investment (1976 - 1980) has been relatively high at 25% of GDP and real GDP grew at 14% in 1976, 4.5% in 1976 and 11% in 1978, compensating for several years of low or negative growth earlier in the decade.

MDC BASIC INDICATORS

	BARBADOS	GUYANA	JAMAICA	TRINIDAD-TOBAGO
Area (sq. miles)	166	83,000	4,411	1,980
Population-thousands (1982)	252	870	2,295	1,203
GDP (1979)[a]	540.7	503.7	2,787	2,160.8
Per Capita GDP (1979)[b]	2,206	603.2	1,304	1,908.9
Exports/GDP (%)	23.1[g]	50.1[h]	33.3[g]	57.9[e]
Imports/GDP (%)	62.8[g]	58.8[h]	50.4[g]	46.3[e]
Unemployment (%)	7.7[d]	21[c]	26[f]	11.9[e]

a millions of US dollars
b US dollars
c 1975
d 1977
e 1979
f 1980
g 1981
h 1982

Source: IFS, IADB and Chernick (1978)

Table A.1

SELECTED ECONOMIC INDICATORS

(Percentage annual average growth rate)

	BARBADOS	GUYANA	JAMAICA	TRINIDAD-TOBAGO
GDP (1960-79)	4.8	2.5	2.6	4.1
Per Capita GDP (1960-79)	4.7	0.6	1.3	3.2
Consumer Prices (1970-76)	16.9	17.8	14.4	13.9
Agriculture	-2.5[a]	-1.3[b]	1.4[a]	-0.1[b]
Manufacturing	6.5[a]	5.5[b]	-2.3[a]	-1.1[b]
Mining (1970-77)	-3.7	-2.7	-0.3	7.3
Construction (1970-77)	-4.0	1.1	-8.4	6.5
Finance and Trade (1970-77)	0.3	3.9	-3.2	6.2
Transport and Communications (1970-77)	-	3.4	4.0	-1.4
Industry (1970-80)	-	-	-2.7	2.8
Exports (1970-78)	-0.1	25.2[c]	-2.7	-1.3
Imports (1970-78)	-1.1	27.7[c]	-5.9	-4.4
Population (1970-79)	0.3	1.7	1.5	1.1

a) 1970-80

b) 1970-77

c) 1976 only

Source: Encyclopedia of the World 1982

Table A.2

PERCENTAGE VALUE-ADDED IN GDP BY SECTOR

	BARBADOS			GUYANA		
	1960	1970	1980	1960	1970	1980
Agriculture	25.9	14.7	10.7	24	19.2	17.2
Mining	0.1	0.1	0.2	14.2	20.3	11.4
Manufacturing	7.9	8.3	12.4	13.3	12.1	18.0
Utilities	1.4	1.3	2.3	a	a	a
Construction	12.6	7.3	7.4	8.9	7.8	7.2
Wholesale and Retail Trade	22.1	19.5	20.5	12.0	11.4	9.4
Transport and Communications	5.3	7.1	6.5	7.1	5.9	6.8
Financial Services	13.8	28	26.5	5.4	5.8	6.0
Other Services	-	-	-	4.7	3.8	2.2
Government	10.9	13.7	13.4	10.3	13.7	21.9

a) Included in the Government Sector

Source: Economic and Social Progress in Latin America: Inter-American Development Bank

Table A.3

PERCENTAGE VALUE-ADDED IN GDP BY SECTOR

	JAMAICA			TRINIDAD-TOBAGO		
	1960	1970	1980	1960	1970	1980
Agriculture	11.0	7.6	8.7	7.5	5.7	2.8
Mining	7.5	7.0	8.8	6.9	21.0	12.2
Manufacturing	16.7	17.6	14.9	25.5	9.4	10.4
Utilities	0.4	0.8	1.3	0.9	2.0	2.4
Construction	11.5	13.2	5.2	4.6	4.7	9.5
Wholesale and Retail Trade	26.7	21.4	15.1	16.9	18.7	17.4
Transport and Communications	5.0	5.5	6.8	16.0	13.9	17.7
Financial Services	9.8	11.1	13.4	8.2	9.1	14.0
Other Services	6.5	6.8	6.1	6.4	7.9	6.1
Government	4.9	9.1	19.6	7.0	7.6	7.5

Source: Economic and Social Progress in Latin America:
Inter-American Development Bank

Table A.4

APPENDIX B

Data Description

(i) Choice of Sample

The accuracy and availability of statistical data can act as the most important limitation to any quantitative study, and this thesis was no exception. To estimate the trade flow model and isolate the effects of economic integration requires data over a number of consecutive years. It is also preferable that all of the members of Carifta/Caricom included in the sample actually trade with all of the external partners chosen. These desired conditions restricted the country coverage within the West Indies, and in particular presented problems for including the LDC's whose trade flow and national income data was incomplete. It was decided therefore that the trade flow model and other quantitative estimates of the effects of integration would be limited to the four MDC's - Barbados, Guyana, Jamaica and Trinidad-Tobago - who dominate regional trade.

The choice of time period was also constrained by data availability and it was felt that if the economic integration effects were to be isolated, the period chosen should be relatively stable. 1967, just prior to the formation of Carifta was chosen as the start of the period and given the disruptions caused by the 1973/74 oil price increases and the subsequent world recession, 1976 was chosen as the end point of the period. It was hoped therefore, that 1967-1976 was both long enough and stable enough to allow isolation of the effects of economic integration on trade flows.

(ii) Data Sources

The data used in the estimation of integration effects is described below:

a Trade Flow Model

Trade Data - imports, millions of US dollars. (Source: United Nations Yearbook of International Trade Statistics, United Nations: New York).

Income - GDP, thousands of US dollars. (Source: Handbook of International Trade and Development Statistics, United Nations: New York, and United Nations Yearbook of National Account Statistics, United Nations: New York).

Population - thousands. (Source: United Nations Demographic Yearbook, United Nations: New York).

b Income Elasticity of Import Demand

Imports - thousands of East Caribbean dollars. (Source: Chernick (1978), Statistical Appendix).

Income - GDP, thousands of East Caribbean dollars. (Source: Chernick (1978), Statistical Appendix).

c Expenditure Share

Trade data - imports and exports, thousands of East Caribbean dollars. (Source: Chernick (1978), Statistical Appendix).

Income - GDP, thousands of East Caribbean dollars. (Source: Chernick (1978) Statistical Appendix).

The trade flow model was estimated using the ordinary least squares (OLSQ) technique, and all econometric computations were carried out on the Edinburgh Multi-Access System (ICL 4-75 computer) using a Time Series Software Package, TSP (1978)

(iii) SITC Section Codes and Section Headings

Section Code	Section Heading
0	Food and Live Animals
1	Beverages and Tobacco
2	Crude Materials, Inedible, except Fuels

Section Code	Section Heading
3	Mineral Fuels, Lubricants and Related Materials
4	Animal and Vegetable Oils and Fats
5	Chemicals
6	Manufactured Goods Classified Chiefly by Material
7	Machinery and Transport Equipment
8	Miscellaneous Manufactured Articles
9	Commodities and Transactions not Classified According to Kind

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